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A Presidential Address
ON
CONTINUITY.

Delivered at Birmingham before the British Association on Wednesday, Sept. 10th,

BY SIR OLIVER LODGE, F.R.S., D.Sc., LL.D., &c.,

PRINCIPAL OF THE UNIVERSITY OF BIRMINGHAM.

[Sir Oliver Lodge began his most interesting address by showing that a marked feature of the present scientific era is the discovery of, and interest in, various kinds of Atomism, so that Continuity seems in danger of being lost sight of. He regretted a tendency among scientific persons toward comprehensive negative generalisations from a limited point of view, and showed that other tendencies are (1) to take refuge in rather vague forms of statement, and to shrink from closer examination of the puzzling and the obscure; and (2) to deny the existence of anything which makes no appeal to organs of sense, and no ready response to laboratory experiment. Against these various tendencies Sir Oliver Lodge contends, urging a belief in ultimate continuity as essential to science, and regarding scientific concentration as an inadequate basis for philosophic generalisation. He continued:—]

THE INCOMPETENCY OF SCIENCE TO MAKE COMPREHENSIVE DENIALS.

I hold that Science is incompetent to make comprehensive denials, even about the Ether, and that it goes wrong when it makes the attempt. Science should not deal in negations: it is strong in affirmations, but nothing based on abstraction ought to presume to deny outside its own region. It often happens that things abstracted from and ignored by one branch of science may be taken into consideration by another. Thus, Chemists ignore the Ether; Mathematicians may ignore experimental difficulties; Physicists ignore and exclude live things; Biologists exclude Mind and Design; Psychologists may ignore human origin and human destiny; Fork-lore students and comparative Mythologists need not trouble about what modicum of truth there may be in the legends which they are collecting and systematising; and Microscopists may ignore the stars. Yet none of these ignored things should be denied.

Denial is no more infallible than assertion. There are cheap and easy kinds of scepticism, just as there are cheap and easy kinds of dogmatism; in fact, scepticism can become viciously dogmatic, and science has to be as much on its guard against personal predilection in the negative as in the positive direction. An attitude of universal denial may be very superficial. "To doubt everything or to believe everything are two equally convenient solutions; both dispense with the necessity of reflection."

All intellectual processes are based on abstraction. For instance, History must ignore a great multitude of facts in order to treat any intelligently: it selects. So does Art; and that is why a drawing is clearer than reality. Science makes a diagram of reality, displaying the works, like a skeleton clock. Anatomists dissect out the nervous system, the blood vessels, and the muscles, and depict them separately,—there must be discrimination for intellectual grasp,—but in life they are all merged and co-operating together; they do not really work separately, though they may be studied separately. A scalpel discriminates: a dagger or a bullet crashes through everything. That is life,—or rather death. The laws of nature are a diagrammatic framework, analysed or abstracted out of the full comprehensiveness of reality.

Hence it is that Science has no authority in denials. To deny effectively needs much more comprehensive knowledge than to assert. And abstraction is essentially not comprehensive: one cannot have it both ways. Science employs the methods of abstraction and thereby makes its discoveries.

PHYSIOLOGY AND THE LAWS OF PHYSICS AND CHEMISTRY.

The reason why some physiologists insist so strenuously on the validity and self-sufficiency of the laws of physics and chemistry, and resist the temptation to appeal to unknown causes—even though the guiding influence and spontaneity of living things are occasionally conspicuous as well as inexplicable—is that they are keen to do their proper work; and their proper work is to pursue the laws of ordinary physical Energy into the intricacies of "colloidal electrolytic structures of great chemical complexity" and to study its behaviour there.

What we have clearly to grasp, on their testimony, is that for all the terrestrial manifestations of life the ordinary physical and chemical processes have to serve. There are not new laws for living matter, and old laws for non-living, the laws are the same; or if ever they differ, the burden of proof rests on him who sustains the difference. The conservation of energy, the laws of chemical combination, the laws of electric currents, of radiation, &c.,—all the laws of Chemistry and Physics,—may be applied without hesitation in the Organic domain. Whether they are sufficient is open to question, but as far as they go they are necessary; and it is the business of the physiologist to seek out and demonstrate the action of those laws in every vital action.

This is clearly recognised by the leaders, and in the definition of Physiology by Burdon Sanderson he definitely limited it to the study of "ascertainable characters of a chemical and physical type." In his Address to the Subsection of Anatomy and Physiology at York in 1881 he spoke as follows: "It would give you a true idea of the nature of the great advance which took place about the middle of this century if I were to define it as the epoch of the death of 'vitalism.' Before that time, even the greatest biologists—e.g., J. Müller—recognised that the knowledge biologists possessed both of vital and physical phenomena was insufficient to refer both to a common measure. The method, therefore, was to study the processes of life in relation to each other only. Since that time it has become fundamental in our science not to regard any vital process as understood at all unless it can be brought into relation with physical standards, and the methods of physiology have been based exclusively on this principle. The most efficient cause [conducing to the change] was the progress which had been made in physics and chemistry, and particularly those investigations which led to the establishment of the doctrine of the Conservation of Energy. ..... Investigators who are now working with such earnestness in all parts of the world for the advance of physiology, have before them a definite and well-understood purpose, that purpose being to acquire an exact knowledge of the chemical and physical processes of animal life and of the self-acting machinery by which they are regulated for the general good of the organism. The more singly and straightforwardly we direct our efforts to these ends, the sooner we shall attain to the still higher purpose—the effectual application of our knowledge for the increase of human happiness." Professor Gotch, whose recent loss we have to deplore, puts it more strongly:—"It is essentially unscientific," he says, "to say that any physiological phenomenon is caused by vital force."

VITAL FORCE.

I observe that by some critics I have been called a vitalist, and in a sense I am; but I am not a vitalist if vitalism means an appeal to an undefined "vital force" (an objectionable term I have never thought of using) as against the laws of Chemistry and Physics. Those laws must be supplemented, but need by no means be superseded. The business of science is to trace out their mode of action everywhere, as far and as fully as possible; and it is a true instinct which resents the mediæval practice of freely introducing spiritual and unknown causes into working science. In science an appeal to occult qualities must be illegitimate, and be a barrier to experiment and research generally; as, when anything is called an Act of God—and when no more is said. The occurrence is left unexplained. As an ultimate statement such a phrase may be not only true but universal in its application. But there are always proximate explanations which may be looked for and discovered with patience. So, lightning, earthquakes, and other portents are reduced to natural causes. No ultimate explanation is ever attained

by science: proximate explanations only. They are what it exists for; and it is the business of scientific men to seek them.

To attribute the rise of sap to vital force would be absurd, it would be giving up the problem and stating nothing at all. The way in which osmosis acts to produce the remarkable and surprising effect is discoverable and has been discovered.

So it is always in science, and its progress began when unknown causes were eliminated and treated as non-existent. Those causes, so far as they exist, must establish their footing by direct investigation and research; carried on in the first instance apart from the long recognised branches of science, until the time when they too have become sufficiently definite to be entitled to be called scientific. Outlandish Territories may in time be incorporated as States, but they must make their claim good and become civilised first.

It is well for people to understand this definite limitation of scope quite clearly, else they wrest the splendid work of biologists to their own confusion,—helped it is true by a few of the more robust or less responsible theorisers, among those who should be better informed and more carefully critical in their philosophising utterances.

But, as is well known, there are more than a few biologists who, when taking a broad survey of their subject, clearly perceive and teach that before all the actions of live things are fully explained, some hitherto excluded causes must be postulated. Ever since the time of J. R. Mayer it has been becoming more and more certain that, as regards performance of work, a living thing obeys the laws of physics, like everything else; but undoubtedly it initiates processes and produces results that without it could not have occurred,—from a bird's nest to a honeycomb, from a deal box to a warship. The behaviour of a ship firing shot and shell is explicable in terms of energy, but the discrimination which it exercises between friend and foe is not so explicable. There is plenty of physics and chemistry and mechanics about every vital action, but for a complete understanding of it something beyond physics and chemistry is needed.

And life introduces an incalculable element. The vagaries of a fire or a cyclone could all be predicted by Laplace's Calculator, given the initial positions, velocities, and the law of acceleration of the molecules; but no mathematician could calculate the orbit of a common house-fly. A physicist into whose galvanometer a spider had crept would be liable to get phenomena of a kind quite inexplicable, until he discovered the supernatural, i.e., literally superphysical, cause. I will risk the assertion that Life introduces something incalculable and purposeful amid the laws of physics; it thus distinctly supplements those laws, though it leaves them otherwise precisely as they were and obeys them all.

We see only its effect, we do not see Life itself. Conversion of Inorganic into Organic is effected always by living organisms. The conversion under those conditions certainly occurs, and the process may be studied. Life appears necessary to the conversion; which clearly takes place under the guidance of life, though in itself it is a physical and chemical process. Many laboratory conversions take place under the guidance of Life, and, but for the experimenter, would not have occurred.

Again, putrefaction, and fermentation, and purification of rivers, and disease, are not purely and solely chemical processes. Chemical processes they are, but they are initiated and conducted by living organisms. Just when medicine is becoming biological, and when the hope of making the tropical belt of the earth healthily habitable by energetic races is attracting the attention of people of power, philosophising biologists should not attempt to give their science away to Chemistry and Physics. Sections D and H and I and K are not really subservient to A and B. Biology is an independent science, and it is served, not dominated, by Chemistry and Physics.

Scientific men are hostile to superstition, and rightly so, for a great many popular superstitions are both annoying and contemptible; yet occasionally the term may be wrongly applied to practices of which the theory is unknown. To a superficial observer some of the practices of biologists themselves must appear grossly superstitious. To combat malaria Sir Ronald Ross does not indeed erect an altar; no, he oils a pond,—making libation to its presiding genii. What can be more ludicrous than the curious and evidently savage ritual, insisted on by United States Officers, at that hygenically splendid achievement the Panama Canal,—the ritual of punching a hole in every discarded tin, with the object of keeping off disease! What more absurd, again,—in superficial appearance—than the practice of burning or poisoning a soil to make it extra fertile!

BIOLOGISTS AND THE PHYSICAL AND CHEMICAL ASPECTS OF LIFE.

Biologists in their proper field are splendid, and their work arouses keen interest and enthusiasm in all whom they guide into their domain. Most of them do their work by intense concentration, by narrowing down their scope, not by taking a wide survey or a comprehensive grasp. Suggestions of broader views and outlying fields of knowledge seem foreign to the intense worker, and he resents them. For his own purpose he wishes to ignore them, and practically he may be quite right. The folly of negation is not his, but belongs to those who misinterpret or misapply his utterances, and take him as a guide in a region where, for the time at least, he is a stranger. Not by such aid is the universe in its broader aspects to be apprehended. If people in general were better acquainted with science they would not make these mistakes. They would realise both the learning and the limitations, make use of the one and allow for the other, and not take the recipe of a practical worker for a formula wherewith to interpret the Universe.

What appears to be quite certain is that there can be no terrestrial manifestation of life without matter. Hence naturally they say, or they approve such sayings as, "I discern in matter the promise and potency of all forms of life." Of all terrestrial manifestations of life, certainly. How else could it manifest itself save through matter? "I detect nothing in the organism but the laws of Chemistry and Physics," it is said. Very well: naturally enough. That is what they are after; they are studying the physical and chemical aspects or manifestations of life. But life itself—life and mind and consciousness—they are not studying, and they exclude them from their purview. Matter is what appeals to our senses here and now; Materialism is appropriate to the material world; not as a philosophy but as a working creed, as a proximate and immediate formula for guiding research. Everything beyond that belongs to another region, and must be reached by other methods. To explain the Psychical in terms of Physics and Chemistry is simply impossible; hence there is a tendency to deny its existence, save as an epiphenomenon. But all such philosophising is unjustified, and is really bad Metaphysics.

AN APPEAL TO DIRECT EXPERIENCE.

So if ever in their enthusiasm scientific workers go too far and say that the things they exclude from study have no existence in the universe, we must appeal against them to direct experience. We ourselves are alive, we possess life and mind and consciousness, we have first-hand experience of these things quite apart from laboratory experiments. They belong to the common knowledge of the race. Births, deaths, and marriages are not affairs of the biologist, but of humanity; they went on before a single one of them was understood, before a vestige of science existed. We ourselves are the laboratory in which men of science, psychologists and others, make experiments. They can formulate our processes of digestion, and the material concomitants of willing, of sensation, of thinking; but the hidden guiding entities they do not touch.

So also if any philosopher tells you that you do not exist, or that the external world does not exist, or that you are an automaton without free will, that all your actions are determined by outside causes and that you are not responsible, —or that a body cannot move out of its place, or that Achilles cannot catch a tortoise; then in all those cases appeal must be made to twelve average men, unsophisticated by special studies. There is always a danger of error in interpreting experience, or in drawing inferences from it; but in a matter of bare fact, based on our own first-hand experience, we are able to give a verdict. We may be mistaken as to the nature of what we see. Stars may look to us like bright specks in a dome, but the fact that we see them admits of no doubt. So also Consciousness and Will are realities of which we are directly aware, just as directly

as we are of motion and force, just as clearly as we apprehend the philosophising utterances of an Agnostic. The process of seeing, the plain man does not understand; he does not recognise that it is a method of ethereal telegraphy; he knows nothing of the ether and its ripples, nor of the retina and its rods and cones, nor of nerve and brain processes; but he sees and he hears and he touches, and he wills and he thinks and is conscious. This is not an appeal to the mob as against the philosopher, it is appeal to the experience of untold ages as against the studies of a generation.

How consciousness became associated with matter, how life exerts guidance over chemical and physical forces, how mechanical motions are translated into sensations,—all these things are puzzling and demand long study. But the fact that these things are so admits of no doubt; and difficulty of explanation is no argument against them. The blind man restored to sight had no opinion as to how he was healed, nor could he vouch for the moral character of the Healer, but he plainly knew that whereas he was blind now he saw. About that fact he was the best possible judge. So it is also with "this main miracle that thou art thou, With power on thine own act and on the world."

But although Life and Mind may be excluded from Physiology, they are not excluded from Science. Of course not. It is not reasonable to say that things necessarily elude investigation merely because we do not knock against them. Yet the mistake is sometimes made. The ether makes no appeal to sense, therefore some are beginning to say that it does not exist. Mind is occasionally put into the same predicament. Life is not detected in the laboratory, save in its physical and chemical manifestations; but we may have to admit that it guides processes nevertheless. It may be called a catalytic agent.

THE ACTION OF LIFE.

To understand the action of life itself, the simplest plan is not to think of a microscopic organism, or any unfamiliar animal, but to make use of our own experience as living beings. Any positive instance serves to stem a comprehensive denial; and if the reality of mind and guidance and plan is denied because they make no appeal to sense, then think how the world would appear to an observer to whom the existence of men was unknown and undiscoverable, while yet all the laws and activities of nature went on as they do now.

Suppose, then, that *man* made no appeal to the senses of an observer of this planet. Suppose an outside observer could see all the events occurring in the world, save only that he could not see animals or men. He would describe what he saw much as we have to describe the activities initiated by life.

If he looked at the Firth of Forth, for instance, he would see piers arising in the water, beginning to sprout, reaching across in strange manner till they actually join or are joined by pieces attracted up from below to complete the circuit (a solid circuit round the current). He would see a sort of bridge or filament thus constructed, from one shore to the other, and across this bridge insect-like things crawling and returning for no very obvious reason.

Or let him look at the Nile, and recognise the meritorious character of that river in promoting the growth of vegetation in the desert. Then let him see a kind of untoward crystallisation growing across and beginning to dam the beneficent stream. Blocks fly to their places by some kind of polar forces; "we cannot doubt" that it is by helio- or other tropism. There is no need to go outside the laws of mechanics and physics, there is no difficulty about supply of energy—none whatever,—materials in tin cans are consumed which amply account for all the energy; and all the laws of physics are obeyed. The absence of any design, too, is manifest; for the effect of the structure is to flood an area up-stream which might have been useful, and to submerge a structure of some beauty; while down-stream its effect is likely to be worse, for it would block the course of the river and waste it on the desert, were it not that fortunately some leaks develop and a sufficient supply still goes down—goes down in fact more equably than before: so that the ultimate result is beneficial to vegetation, and simulates intention.

If told concerning either of these structures that an engineer, a designer in London, called Benjamin Baker, had anything to do with it, the idea would be preposterous. One conclusive argument is final against such a superstitious hypothesis—he is not there, and a thing plainly cannot act where it is not. But although we, with our greater advantages, perceive that the right solution for such an observer would be the recognition of some unknown agency or agent, it must be admitted that an explanation in terms of a vague entity called vital force would be useless, and might be so worded as to be misleading; whereas a statement in terms of mechanics and physics could be clear and definite and true as far as it went, though it must necessarily be incomplete.

And note that what we observe, in such understood cases, is an *Interaction* of Mind and Matter; not Parallelism nor Epiphenomenalism nor anything strained or difficult, but a straightforward utilisation of the properties of matter and energy for purposes conceived in the mind, and executed by muscles guided by acts of will.

But, it will be said, this is unfair, for we *know* that there is design in the Forth Bridge or the Nile Dam, we have seen the plans and understand the agencies at work: we know that it was conceived and guided by life and mind, it is unfair to quote this as though it could simulate an automatic process.

Not at all, say the extreme school of biologists whom I am criticising, or ought to say if they were consistent, there is nothing but Chemistry and Physics at work anywhere; and the mental activity apparently demonstrated by those structures is only an illusion, an epiphenomenon; the laws of chemistry and physics are supreme, and they are sufficient to account for everything!

Well, they account for things up to a point; they account in part for the colour of a sunset, for the majesty of a mountain peak, for the glory of animate existence. But do they account for everything completely? Do they account for our own feeling of joy and exaltation, for our sense of beauty, for the manifest beauty existing throughout nature? Do not these things suggest something higher and nobler and more joyous, something for the sake of which all the struggle for existence goes on?

THE PROBLEM OF EXISTENCE.

Surely there must be a deeper meaning involved in natural objects. Orthodox explanations are only partial, though true as far as they go. When we examine each particoloured pinnule in a peacock's tail, or hair in a zebra's hide, and realise that the varying shades on each are so placed as to contribute to the general design and pattern, it becomes exceedingly difficult to explain how this organised coöperation of parts, this harmonious distribution of pigment cells, has come about on merely mechanical principles. It would be as easy to explain the sprouting of the cantilevers of the Forth Bridge from its piers, or the flocking of the stones of the Nile Dam by chemiotaxis. Flowers attract insects for fertilisation; and fruit tempts animals to eat it in order to carry seeds. But these explanations cannot be final. We have still to explain the insects. So much beauty cannot be necessary merely to attract their attention. We have further to explain this competitive striving towards life. Why do things struggle to exist? Surely the effort must have some significance, the development some aim. We thus reach the problem of Existence itself, and the meaning of Evolution.

The mechanism whereby existence entrenches itself is manifest, or at least has been to a large extent discovered. Natural Selection is a *vera causa*, so far as it goes; but if so much beauty is necessary for insects, what about the beauty of a landscape or of clouds? What utilitarian object do those subserve? Beauty in general is not taken into account by science. Very well, that may be all right, but it exists nevertheless. It is not my function to discuss it. No; but it is my function to remind you and myself that our studies do not exhaust the Universe, and that if we dogmatise in a negative direction, and say that we can reduce everything to physics and chemistry, we gibbit ourselves as ludicrously narrow pedants, and are falling far short of the richness and fullness of our human birthright. How far preferable is the reverent attitude of the Eastern Poet:—

> "The world with eyes bent upon thy feet stands in awe with all its silent stars."

Superficially and physically we are very limited. Our sense organs are adapted to the observation of matter; and

nothing else directly appeals to us. Our nerve-muscle-system is adapted to the production of motion in matter, in desired ways; and nothing else in the material world can we accomplish. Our brain and nerve systems connect us with the rest of the physical world. Our senses give us information about the movements and arrangements of matter. Our muscles enable us to produce changes in those distributions. That is our equipment for human life; and human history is a record of what we have done with these parsimonious privileges.

Our brain, which by some means yet to be discovered connects us with the rest of the material world, has been thought partially to disconnect us from the mental and spiritual realm, to which we really belong but from which for a time and for practical purposes we are isolated. Our common or social association with matter gives us certain opportunities and facilities, combined with obstacles and difficulties which are themselves opportunities for struggle and effort.

Through matter we become aware of each other, and can communicate with those of our fellows who have ideas sufficiently like our own for them to be stimulated into activity by a merely physical process set in action by ourselves. By a timed succession of vibratory movements (as in speech and music), or by a static distribution of materials (as in writing, painting, and sculpture), we can carry on intelligent intercourse with our fellows; and we get so used to these ingenious and roundabout methods, that we are apt to think of them and their like as not only the natural but as the only possible modes of communication, and that anything more direct would disarrange the whole fabric of science.

It is clearly true that our bodies constitute the normal means of manifesting ourselves to each other while on the planet; and that if the physiological mechanism whereby we accomplish material acts is injured, the conveyance of our meaning and the display of our personality inevitably and correspondingly suffer.

So conspicuously is this the case that it has been possible to suppose that the communicating mechanism, formed and worked by us, is the whole of our existence: and that we are essentially nothing but the machinery by which we are known. We find the machinery utilising nothing but well-known forms of energy, and subject to all the laws of chemistry and physics,—it would be strange if it were not so,—and from that fact we try to draw valid deductions as to our nature, and as to the impossibility of our existing apart from and independent of these temporary modes of material activity and manifestation. We so uniformly employ them, in our present circumstances, that we should be on our guard against deception due to this very uniformity. Material bodies are all that we have any control over, are all that we are experimentally aware of; anything that we can do with these is open to us; any conclusions we can draw about them may be legitimate and true. But to step outside their province and to deny the existence of any other region because we have no sense organ for its appreciation, or because (like the Ether) it is too uniformly omnipresent for our ken, is to wrest our advantages and privileges from their proper use and apply them to our own misdirection.

EVOLUTIONARY PROGRESS.

But if we have learnt from science that Evolution is real, we have learnt a great deal. I must not venture to philosophise, but certainly from the point of view of science Evolution is a great reality. Surely evolution is not an illusion; surely the universe progresses in time. Time and Space and Matter are abstractions, but are none the less real; they are data given by experience; and Time is the keystone of evolution. "Thy centuries follow each other, perfecting a small wild flower."

We abstract from living moving Reality a certain static aspect, and we call it Matter; we abstract the element of progressiveness, and we call it Time. When these two abstractions combine, co-operate, interact, we get reality again. It is like Poynting's theorem.

The only way to refute or confuse the theory of Evolution is to introduce the subjectivity of time. That theory involves the reality of time, and it is in this sense that Professor Bergson uses the great phrase "Creative Evolution."

I see the whole of material existence as a steady passage from past to future, only the single instant which we call the present being actual. The past is not non-existent, however, it is stored in our memories, there is a record of it in matter, and the present is based upon it; the future is the outcome of the present, and is the product of evolution.

Existence is like the output from a loom. The pattern, the design for the weaving, is in some sort "there" already; but whereas our looms are mere machines, once the guiding cards have been fed into them, the Loom of Time is complicated by a multitude of free agents who can modify the web, making the product more beautiful or more ugly according as they are in harmony or disharmony with the general scheme. I venture to maintain that manifest imperfections are thus accounted for, and that *freedom* could be given on no other terms, nor at any less cost.

The ability thus to work for weal or woe is no illusion, it is a reality, a responsible power which conscious agents possess; wherefore the resulting fabric is not something preordained and inexorable, though by wide knowledge of character it may be inferred. Nothing is inexorable except the uniform progress of time; the cloth must be woven, but the pattern is not wholly fixed and mechanically calculable.

Where inorganic matter alone is concerned, there everything is determined. Wherever full consciousness has entered, new powers arise, and the faculties and desires of the conscious parts of the scheme have an effect upon the whole. It is not guided from outside but from within; and the guiding power is immanent at every instant. Of this guiding power we are a small but not wholly insignificant portion.

That evolutionary progress is real is a doctrine of profound significance, and our efforts at social betterment are justified because we are a part of the scheme, a part that has become conscious, a part that realises, dimly at any rate, what it is doing and what it is aiming at. Planning and aiming are therefore not absent from the whole, for we are a part of the whole, and are conscious of them in ourselves.

THE SCOPE OF THE METHODS OF SCIENCE.

Either we are immortal beings or we are not. We may not know our destiny, but we must have a destiny of some sort. Those who make denials are just as likely to be wrong as those who make assertions: in fact, denials are assertions thrown into negative form. Scientific men are looked up to as authorities, and should be careful not to mislead. Science may not be able to reveal human destiny, but it certainly should not obscure it. Things are as they are, whether we find them out or not; and if we make rash and false statements, posterity will detect us—if posterity ever troubles its head about us. I am one of those who think that the methods of Science are not so limited in their scope as has been thought: that they can be applied much more widely, and that the Psychic region can be studied and brought under law too. Allow us anyhow to make the attempt. Give us a fair field. Let those who prefer the materialistic hypothesis by all means develop their thesis as far as they can; but let us try what we can do in the Psychical region, and see which wins. Our methods are really the same as theirs—the subject-matter differs. Neither should abuse the other for making the attempt.

Whether such things as intuition and revelation ever occur is an open question. There are some who have reason to say that they do. They are at any rate not to be denied off-hand. In fact, it is always extremely difficult to deny *anything* of a general character, since evidence in its favour may be only hidden and not forthcoming, especially not forthcoming at any particular age of the world's history, or at any particular stage of individual mental development. Mysticism must have its place, though its relation to Science has so far not been found. They have appeared disparate and disconnected, but there need be no hostility between them. Every kind of reality must be ascertained and dealt with by proper methods. If the voices of Socrates and Joan of Arc represent real psychical experiences, they must belong to the intelligible universe.

THE PERSISTENCE OF PERSONALITY BEYOND BODILY DEATH.

Although I am speaking *ex cathedrâ*, as one of the representatives of orthodox science, I will not shrink from a personal note summarising the result on my own mind of thirty years' experience of psychical research, begun without predilection—indeed with the usual hostile prejudice. This is not the place to enter into details or to discuss facts scorned by orthodox science, but I cannot help remembering than an utterance from this Chair is no ephemeral production, for it remains to be criticised by generations yet unborn, whose knowledge must inevitably be fuller and wider than our

own. Your President therefore should not be completely bound by the shackles of present-day orthodoxy, nor limited to beliefs fashionable at the time. In justice to myself and my co-workers I must risk annoying my present hearers, not only by leaving on record our conviction that occurrences now regarded as occult can be examined and reduced to order by the methods of science carefully and persistently applied, but by going further and saying, with the utmost brevity, that already the facts so examined have convinced me that memory and affection are not limited to that association with matter by which alone they can manifest themselves here and now, and that personality persists beyond bodily death. The evidence to my mind goes to prove that discarnate intelligence, under certain conditions, may interact with us on the material side, thus indirectly coming within our scientific ken; and that gradually we may hope to attain some understanding of the nature of a larger, perhaps ethereal, existence, and of the conditions regulating intercourse across the chasm. A body of responsible investigators has even now landed on the treacherous but promising shores of a new continent.

THE RELATIONS OF SCIENCE AND RELIGION.

Yes, and there is more to say than that. The methods of science are not the only way, though they are our way, of arriving at truth. "*Uno itinere non potest perveniri ad tam grande secretum.*"

Many scientific men still feel in pugnacious mood towards Theology, because of the exaggerated dogmatism which our predecessors encountered and overcame in the past. They had to struggle for freedom to find truth in their own way; but the struggle was a miserable necessity, and has left some evil effects. And one of them is this lack of sympathy, this occasional hostility, to other more spiritual forms of truth. We cannot really and seriously suppose that truth began to arrive on this planet a few centuries ago. The pre-scientific insight of genius—of Poets and Prophets and Saints—was of supreme value, and the access of those inspired seers to the heart of the universe was profound. But the camp followers, the scribes and pharisees, by whatever name they may be called, had no such insight, only a vicious or a foolish obstinacy; and the prophets of a new era were stoned.

Now at last we of the new era have been victorious; we inherit the fruits of the age-long conflict, and the stones are in our hands Let us not fall into the old mistake of thinking that ours is the only way of exploring the multifarious depths of the universe, and that all others are worthless and mistaken. The universe is a larger thing than we have any conception of, and no one method of search will exhaust its treasures.

Men and brethren, we are trustees of the truth of the physical universe as scientifically explored: let us be faithful to our trust.

Genuine religion has its roots deep down in the heart of humanity and in the reality of things It is not surprising that by our methods we fail to grasp it: the actions of the Deity make no appeal to any special sense, only a universal appeal; and our methods are, as we know, incompetent to detect complete uniformity. There is a Principle of Relativity here, and unless we encounter flaw or jar or change, nothing in us responds; we are deaf and blind therefore to the immanent Grandeur around us, unless we have insight enough to appreciate the Whole, and to recognise in the woven fabric of existence, flowing steadily from the loom in an infinite progress towards perfection, the ever-growing garment of a transcendent God.

THE ROYAL SOCIETY OF MEDICINE.—The Historical Section of the Royal Society of Medicine has arranged that three lectures shall be given during the first half of the ensuing session upon the Early History of Medicine. The first will be delivered by Professor Jastrow, of the University of Pennsylvania, one of the most distinguished living Assyriologists, on Babylonian Medicine; the second upon Egyptian Medicine, by Professor Elliot Smith; and the third on Greek Medicine, by Professor Richard Caton. The lectures will be illustrated, and all members of the profession, as well as students, who are interested in the subject will be heartily welcome. Professor Jastrow's lecture will be delivered at the Royal Society of Medicine on Friday, Oct. 10th, at 5 P.M.

An Address
ON
MIND AND MOTIVE: SOME NOTES ON CRIMINAL LUNACY.

Delivered before the Section of Forensic Medicine, at the International Congress of Medicine, on August 7th, 1913,

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LORD CHANCELLOR'S VISITOR IN LUNACY, ETC.

GENTLEMEN,—There is no royal road to a knowledge of criminal lunacy. This hydra-headed conjunction of crime and insanity forces itself upon our acquaintance through miserable lives and surroundings, through wretched and disordered phases of mind, through noxious records of jealousy and drink and of sexual and savage passions, and through manifold experiences taught in reformatories, prisons, and asylums. It occurred to me that the Forensic Medicine Section of this International Congress might be interested in listening to some Notes on Criminal Lunacy from an old Government official of 46 years' service; with a record of ten years' medical work in convict prisons, 20 years at Broadmoor Criminal Lunatic Asylum, and 16 years in his present office as Lord Chancellor's Visitor in Lunacy; work varied during the last 27 years by holding from time to time special inquiries on behalf of the Home Office.

The idea of crime on the one hand and the idea of insanity on the other each in its way implies a deviation more or less important from standards of conduct which bear the stamp of social sanction. What those standards are and what those deviations amount to are the questions which form the basis of any estimate regarding individual members of the community who have committed acts of criminal import. From the estimate thus formed we have the evolution—so far as criminal acts are concerned—of the criminal and the criminal lunatic. Crime, criminals, and criminal lunatics are subjects which lend themselves to much thought and contemplation, and also to much literary effort and bookmaking; and they are subjects with regard to which it may be said that the less you know the more you can write, especially if you are gifted with an abounding imagination and a metaphysical turn of mind. However that may be, as big social problems they are subjects which stand out prominently in the range of economical science, domestic politics, and legislative procedure; but taking them to-day, as we are, on the more limited but still comprehensive area of criminal psychology we are to regard them from two principal points of view—the theoretical or speculative and the practical or medico-legal. The theoretical standpoint need not not keep us long, as it does not immediately concern us.

INSANITY AND CRIME.

Insanity is a mental condition or a neurosis, and its heredity or hereditary transmission is a fact in nature well established and universally accepted. The heredity of crime, of which we hear so much, is a mythical and dangerous doctrine advanced by those so-called "criminologists" who would have us look upon criminals as poor hapless creatures foredoomed by nature from birth to eventuate as parasites preying upon society by the perpetration of certain punishable acts. Now, crime (unlike insanity) is neither a mental condition nor a neurosis; it has to be regarded in the main [1] as an occupation, an employment, or a business taken up as the outcome of environment, education, training, and circumstances, and entered upon as a means of trying to make a living; and the same train of thought may be applied to shoemaking, agricultural labour, and other occupations where sons succeed fathers, or children parents.

[1] In the criminal statistics for the year 1911 it is shown (Table V.) that of 10,646 persons convicted and sentenced, as many as 82·7 were convicted for offences against property, with or without violence, and for forgery and offences against the currency—i.e., as many as 77 per cent. were convicted for crimes which had reference to the acquirement of property by larceny and other thievish and fraudulent means, or, in other words, that more than three-fourths of our crime has relation to the means used for earning a livelihood or maintaining a family.

It is too much to expect a young thing—an infant or an infant brain—to rise superior to the compulsory education in crime with which criminal parentage and the criminal atmosphere generally smother it. I defy the children of the most intellectual and the most cultured and moral Lord Chancellor or Lord Archbishop not to succumb under similar circumstances. Besides, the "heredity" idea as to crime takes the heart and the hope out of all philanthropic and legislative measures for the education and proper upbringing of children and youths. Look what has been done by training-ships and by Barnardo and other homes for waifs and strays! This could never have been done if crime is an inborn and inherent ingredient of any mental life.

Again, we are not concerned to-day with the theorist and faddist doctrine that all who commit murder are insane; nor with that other tenet which one so often hears from people who look upon themselves as specially strong-minded—that tenet—a remedial one of sorts—which would make a clean sweep of all lunatics, ordinary and criminal, by consigning them to the lethal chamber.

CRIMINAL LUNACY.

Coming now to criminal lunacy (involving crime, criminals and criminal lunatics) in its practical or medico-legal aspect, we find, to start with, that while the criminal tendency or bent in the sane is towards thieving and plunder, the criminal tendency in the insane is towards homicide or personal violence. Thus, of 1120 criminal lunatics under detention at the end of the year 1911, more than 800 were detained for murder, manslaughter, attempts to murder, and wounding. Of this 800 as many as 478 (nearly five-eighths) had committed murder, the proportion being 289 males and 189 females.

A peculiar interest attaches to the question of insanity when it is raised with regard to a fellow-being who is under trial for a criminal offence, however trivial in character; but when the offence is murder and when a verdict of guilty involves the possibility of the death penalty the interest to the medical man concerned becomes absorbing and laden with heavy responsibility. The notes I am submitting here have reference to murder cases only, and are necessarily, with the time at my disposal, somewhat crude and sketchy in character.

Insanity and all the conditions leading up to it are the *bête noire* of the medical practitioner, for in the first place he is brought into contact with the domestic difficulties and troubles of his patients at an inconvenient and disagreeable angle, especially if he has to send the head of the house or any of its members to an asylum; and, secondly, his education and training for his profession have probably been so far neglected that he has not had the opportunity of dealing practically with the insane. I have always held that no medical man is fully equipped for the practice of his profession unless he has had some months' experience—the more the better—as a medical officer in an asylum. To this lack of experience is no doubt traceable much of the criminal lunacy which is preventable, and which would be prevented if certification and if removal to an asylum or to proper care and supervision were not so long delayed. Experience and the resulting capacity for arriving at a proper decision enable the physician to more effectively gauge the mental characteristics of the individual, and also the motives which are most likely to actuate him when deviations from the normal in the direction of insanity thrust themselves prominently into notice.

When the provisions of the Mental Deficiency Bill now in process of becoming law come into operation there will be a more ready means of preventing weaklings and mental defectives from qualifying as criminal lunatics by committing murder or other crimes more or less grave. Doctors will then have a less troublesome task in dealing with patients of this class, who are so difficult and impossible at home. The Act will thus have an immense and direct beneficial social influence, and will also become a veritable means of effecting a reduction in the number of criminal lunatics. There is, however, undoubtedly a risk of abuse in this matter which will have to be guarded against. That risk is lest unquestionably certifiable lunatics should be shut up in institutions as mere defectives under the operation of the Act. On this account I think it is fortunate for the public that the Commissioners in Lunacy are to be administrators in this somewhat ticklish matter. How they will like it is another question!

I may mention, by the way, that the Board of Lord Chancellor's Visitors are fully cognisant of frequent abuses arising in connexion with a beneficent provision which was made in the Lunacy Act (1890, Section 116, Subsection (*d*)) on behalf of persons who are merely suffering from senility or from such mental infirmity as incapacitates them from looking after their own affairs. Undoubted and certifiable lunatics, often of a troublesome description, are dealt with under this particular subsection of the Act in order to avoid certification. The authorities are thus deprived of the power of dealing with the patient personally, and have to confine themselves to the disbursement of his money. These cases are not under official medical cognisance or supervision, and they are therefore liable to careless management and a retardation of recovery.

MEDICAL JURISPRUDENCE OF INSANITY.

Coming now to the medical jurisprudence of insanity, the broad guiding principles upon which medical opinion has to be based are two in number: 1. That no lunatic shall be hanged. This would be an unworthy and repulsive spectacle, repugnant to public feeling: a spectacle to which no Judge of the High Court, however officially dogmatic in rigid application of the "right and wrong" test of insanity would, as a private gentleman, allow himself to subscribe as a contributing party. In cases where a judge has, on the rigid test or on the failure of the plea on other grounds, to sentence to death a prisoner whom he has some reason to believe to be insane, he has always the opportunity of communicating with the Home Secretary on the subject. 2. That no mere criminal shall, on the plea of insanity, be allowed to escape the due punishment for his act of murder. Herein lies the responsibility of the doctor who is giving evidence, expert or otherwise. He is on the horns of a dilemma. If, from lack of experience or want of sufficient careful examination into the mental condition, motives and circumstances, he fails to trace the insanity which, as a matter of fact, exists, he runs himself against the first principle, and contributes to the hanging of a lunatic. If, on the other hand, he declares for insanity from sentiment or on insufficient grounds, or if he fails to see through the prisoner's sham indications of insanity, he runs against the second principle by "standing in" with the criminal impostor and helping him to escape punishment: thereby failing in his duty to the public.

The administration of justice in England in murder cases rests, before and during the trial, with the Treasury, who act as prosecutors; and after the trial with the Home Office, who have to carry out the sentence of the court, or, if occasion arises, reconsider it, possibly in consultation with the judge.

In the procedure by which a decision is arrived at as to whether a prisoner is or is not a criminal lunatic, there are three stages where the state of his mind may come up for consideration:—

1. The jury may be called upon to give their verdict as to his fitness to plead. It is always best, if possible, to let the prisoner stand his trial and plead. This course does away with his after-grievance that he was not allowed to speak on his own behalf. Cases, however, do present themselves where the dementia or the insanity is such as to make it futile to place the prisoner in the dock.

2. The trial itself. Here the examination of the prisoner before trial by medical men is apt to be handicapped by the fact that the prisoner is not bound to answer truthfully (if he answers at all), apart from any confession he may have made, or in view of his coming plea of not guilty.

3. The prerogative of mercy exercised by the Home Secretary on behalf of the King. The Criminal Lunatics Act, 1884, Section 2(1), empowers the holding of a statutory inquiry in the following terms: "In the case of a prisoner under sentence of death, if it appears to a Secretary of State, either by means of a certificate signed by two members of the visiting committee of the prison in which such prisoner is confined, or by any other means, that there is reason to believe such prisoner to be insane, the Secretary of State shall appoint two or more legally qualified medical practitioners, and the said medical practitioners shall forthwith examine such prisoner and inquire as to his insanity, and after such examination and inquiry such practitioners shall make a report in writing to the Secretary of State as to the sanity of the prisoner, and they, or the majority of them, may certify in writing that he is insane." In this regard, the recommendation of the jury, a letter from the judge, or

information sent by responsible citizens is duly considered by the Secretary of State.

I have already referred to the grave responsibility that rests with medical men called in to examine and report or to give evidence as to the mental condition of a prisoner charged with murder. The range of their examination has to deal with the general mental condition of the prisoner, his mental condition at the time of the murder or alleged murder, the circumstances which led up to the murder, and the circumstances and the mode of the murder itself. Running through the whole area of our inquiry the question of motive or the inciting cause has to be kept in the forefront, for in some cases strange beliefs and morbid fancies show themselves in the previous life-history of the individual which, although in themselves seemingly remote, may afford some clue or explanation as to why the murder was committed. After sentence to death the restrictions which hampered examination at the trial are to some extent removed.

I am anxious to-day to impress upon you not merely the necessity of not being contented with finding mere "indications" of insanity, which may be real, or may be false and assumed for the purpose of deceiving; but also the necessity of leaving nothing out in our scrutiny which would help in getting at the inciting cause, getting at the *motive* for the murder. We must continue to ask ourselves, "Why did he do it?" For this is the *crux* in forming an opinion as to the existence of insanity in criminal as compared with ordinary non-criminal cases; it is the focus upon which our investigation must be directed and centred. There is in murder cases a specific act round which our examination concentrates itself.

I now propose to deal briefly with some questions and considerations connected with the medico-legal inquiries in murder cases.

KNOWLEDGE OF RIGHT AND WRONG.

This is not a bad rough-and-ready test for use in a court of law, and the question is one which a medical witness ought to be prepared to answer: (1) If he can say prisoner did not know right from wrong, let him say so; (2) if he has an opportunity of saying prisoner knew right from wrong, but that his power of self-control was in abeyance or lost, let him say so; (3) if he believes prisoner knew right from wrong absolutely, let him say so.

At the trial of James Jefferson at Leeds, in July, 1908, for murder, the medical witness said, "I think he knew he was doing wrong"; whereupon a juror asked: "If he knew he was doing wrong, but was insane, how then?" Mr. Justice Bigham: "If he knew he was doing wrong it does not matter how insane he was, he is guilty." The jury after a retirement of an hour and a half found the prisoner guilty, and he was sentenced to death. The case came before the Court of Criminal Appeal (consisting of Mr. Justice Lawrance, Mr. Justice Ridley, and Mr. Justice Darling), and the decision arrived at was as follows (*Times*, July 31st, 1908): "Mr. Justice Lawrance, in giving judgment, said that there was no doubt that the verdict was unsatisfactory, and in his judgment it ought not to stand. He had read the evidence given by the doctors, and it appeared that there was strong evidence called before the jury which showed that this man was not in such a state of mind as to make himself responsible for his act. The verdict being unsatisfactory, he thought they ought to say that the verdict which the jury should have returned was that the man was insane when he committed the act. ..... The verdict would be set aside and the order would be that the prisoner should be detained during His Majesty's pleasure."

No word in this decision as to "right and wrong" as a test of responsibility. I think it well to mention this case here as showing that in the eye of the law a knowledge of right and wrong is not incompatible with the existence of insanity, carrying with it irresponsibility, in the individual.

Take the case of insane persons, and *there are many of them*, who commit murder and who at once either go and give themselves up to the police or make their escape, showing that they knew they had done wrong.

R. D., who murdered his father in Cobham Park many years ago, not from any malicious motive but because the apparent approximation of two stars in the Great Bear was a behest to his deluded mind that he had to do this "to set free the great God Osiris." He escaped at once to France where he was found wandering and placed in an asylum, whence he was brought back to this country, and died in Broadmoor.

Again, W. A. N., an insane person, murdered his two children by cutting their throats one morning in Bermondsey. He went straightway to the police-station and told the sergeant on duty what he had done. He was found insane and ordered to be detained during Her Majesty's pleasure.

Again, many insane women who commit infanticide know that it is a wrong act; but the judge does not even put his question as to right or wrong to the jury.

PRE-EXISTING MENTAL ENFEEBLEMENT: ITS DEGREE AND CHARACTER.

Mental enfeeblement in some form is a precursor of the insanity which leads up to murder in a large number of cases, and has to be reckoned with in our estimate of the general mental condition of the alleged murderer. Its action is two-fold: on the one hand, it causes failure and disaster in business operations, in industrial occupations, and in the affairs of life generally; and, on the other, it is apt to expand into more serious and more active mental derangement under the pressure of poverty and distress. Over-anxiety, stress, worry, and domestic trouble, especially when combined with some amount of intemperance in drink, form the most potent outside factors in the production of criminal insanity.

For our purpose mental enfeeblement may be classed under four heads:—1. Natural mental defect. This may be congenital or it may arise from arrested mental development later in life. This is a very large class, and it supplies the "borderland cases" in cases of insanity, and also those cases—those "mental defectives"—for whom the legislature is at present making provision, as already referred to. Moral obliquity finds a place here. 2. Mental enfeeblement resulting from idiopathic cerebral lesions, softening, senility, and the like. 3. Mental enfeeblement resulting from traumatic cerebral lesions, from blows and from injuries due to external influences, including sunstroke. 4. Mental enfeeblement associated with neurasthenia, malnutrition, and drink.

In dealing with the various conditions here specified, it must be clearly understood and constantly borne in mind that they do not in themselves either constitute insanity in any form or imply irresponsibility. The individual, in spite of them and of their supposed influence, has to be regarded as sane and responsible and capable of committing acts which are referable to ordinary malicious motives, acts which, in themselves, are of purely criminal import, and therefore punishable. Nevertheless, they are conditions of mind that have to be considered and weighed when we are dealing with homicides whose crime is a matter of life and death, and may or may not be due to insanity.

THE QUESTION OF INFIDELITY.

This question—where the victim is wife, paramour, or sweetheart—arises in many cases of murder, and it is a question which is by no means always easy of solution; for the belief in the prisoner's mind may be well founded and true in fact, or it may be an absolutely groundless delusion. This is one of the cases where it is sometimes necessary to have recourse to outside evidence of the police or of neighbours as to domestic relationships, where that has not already been given at the trial. The circumstances of the case, the personal narrative of the prisoner, and the opinion we have already arrived at (before the subject of the murder is touched upon) as to the reliability or otherwise of his statements, no doubt help us in forming a judgment in a matter where, as frequently happens, a jealous disposition and some indulgence in drink about the time of the murder combine to complicate the situation.

R. G. murdered his child and at the same time threatened to murder his wife, who, he alleged, was unfaithful to him. He was found guilty and sentenced to death. The late Sir Richard Brayn and I examined him at the request of the Home Office, and found that he had delusions, not only about his wife's unfaithfulness, but also that the child whom he murdered was not his. He had other delusions, as well as hallucinations of vision. We reported to the Home Secretary that in our opinion he was insane and irresponsible for his actions at the time he committed the murder, and we certified him to be insane at the time of our statutory inquiry into his mental condition. The death sentence

was repealed and the man was sent to Broadmoor. This case was especially interesting, as the judge who tried him spoke to me afterwards unofficially on the subject, and said he could not understand how we came to report in favour of the insanity of the prisoner, as he had gone closely into all the evidence in the case, and could find nothing to justify him in thinking he was of unsound mind or unaccountable for his actions. (This was before the Act was passed which enables a prisoner and his wife to give evidence.) I pointed out to him that he had *all* the evidence except that which was most vital, and which my colleague and I had—viz., that of the prisoner himself and that of his wife, upon which we were able to arrive at our decision. Whereupon the judge expressed his agreement with the opinion we had formed and his satisfaction with the ultimate ruling of the Home Office in the case.

ALCOHOLIC EXCESS.—(1) DELIRIUM TREMENS, (2) DRUNKENNESS TO OBLIVION, AND (3) SIMPLE DRUNKENNESS.

The medico-legal relations (in murder cases) of these three phases of excessive indulgence in alcohol need only be referred to briefly.

1. Delirium tremens is a recognised disease of the brain, in which delusions of a dangerous sort are apt to prevail; and when murder is committed by a person suffering therefrom the jury are not unwilling to record their verdict that the act was that of an insane person.

I. E. was indicted for the murder of his son, aged 3 years, by cutting his throat. After medical evidence of delirium tremens was given, Mr. Justice Charles in his summing up said: "Although the mere condition of drunkenness did not excuse the committal of crime, yet drunkenness might bring about a diseased condition of mind which proved an excuse for crime, in so far that such a person was not held responsible in the ordinary way, but was detained during the pleasure of His Majesty." The jury then found the prisoner guilty, but added that they considered he was of unsound mind when he committed the crime.

The case of H H., who, during an attack of delirium tremens, murdered a domestic servant by shooting her, was similarly found insane by the jury; and numerous other cases are recorded.

2. Drunkenness to oblivion ("mad drunk" or "blind drunk"), unlike delirium tremens, is not a disease and cannot be dealt with on that footing. As a condition where some amount of derangement of consciousness and volition leading to crime is brought about by the individual's own act, aggravated drunkenness is not looked upon in courts of law as favouring a verdict of insanity. In murder cases, however, where the death penalty has been recorded, circumstances have occasionally been found such as have justified the Home Secretary in granting a reprieve to penal servitude for life.

3. The rôle played by simple drunkenness with regard to criminal lunacy is a grave one, as it is largely responsible for the fact that many harmless and inoffensive lunatics or quasi-lunatics are converted into criminal lunatics. In homicidal cases where this takes place drink is the last straw in determining that nothing short of murder will, to the lunatic's mind, meet the revengeful demands of the over-heated brain. It would never do to let mere drunkenness weigh, as insanity does, in relieving a murderer of his responsibility for the homicidal act. The case of H. T. in this relation is an interesting one. This man was sentenced to death and ultimately hanged for the murder of his wife, about whose fidelity he had doubts. Sir Richard Brayn and I held a medical inquiry into the state of his mind after he was sentenced. We found no insanity, but he told us that on the day of the murder he took a half-holiday and primed himself to excess with drink to give him courage to carry out his intention of killing his wife.

EPILEPSY.

Epilepsy has a weird and somewhat anomalous association with criminal lunacy and a real and important significance in homicidal cases. Genuine epilepsy may occur with sane states or with insane states of mind. In either case, in connexion with the fits, homicidal acts may be committed during unconsciousness and with complete obliviousness afterwards. But these acts are not complicated acts, nor, so far as my experience goes, premeditated or murderous in intent; and the motive will be searched for in vain, although in some cases some amount of association of idea with thoughts occurring during the pre-epileptic stage is discoverable.

The well-known Broadmoor case of E.C. is an interesting one. Mrs. C. while dressing her infant went to cut some bread for another child. She had an epileptic seizure, and instead of cutting the bread severed her infant's arm at the wrist. She had no consciousness of the act, and she told me at Broadmoor that she had no recollection whatever of what she had done.

Another case, that of H. J., is referred to by Dr. Baker, the Superintendent of Broadmoor, in an instructive analytical paper on Epilepsy and Crime in the *Journal of Mental Science* for April, 1901. H. J. was the subject of epilepsy after head injury, intensified by habits of intemperance. He went to a slaughter-house with the object of interviewing a man concerning the killing of a pig. On returning home he beckoned his little girl, who was sitting on the doorstep, into the house, and he had no recollection of anything happening until a few minutes afterwards he discovered the child lying across his knees with her throat cut.

In the case of William G., a man well known to be epileptic, the death sentence was recorded, and Sir Richard Brayn and I were able to report to the Home Secretary that his act of putting his child on the fire resulting in death was committed while he was in an epileptic condition supervening upon alcoholic intoxication, and that at the time he was not conscious of what he was doing. Nor did he afterwards remember anything about having done it. He was reprieved.

DELUSIONS.

General delusions of one sort or another, with or without hallucination, in an insane person charged with murder constitute the most frequent inciting cause of the homicidal act, and they are not difficult to detect in ordinary straightforward cases. The prisoner is only too willing, for the most part, to narrate the circumstances, to explain his grievances, and to justify his conduct if he believes himself to be the victim of conspiracy or persecution. Speaking generally, they are mostly divisible into two classes: (*a*) Delusions in conditions of mental exaltation or mania; and (*b*) delusions in conditions of mental depression or melancholia.

(*a*) *Delusions in conditions of mental exaltation and excitement* are chiefly exemplified in cases where one man kills another man, the incitement to murder being usually a delusion or delusions of persecution, suspicion, or of aggravated personal injury or annoyance in some form.

W. C. M., an American gentleman, of temperate habits and of great intelligence, murdered a complete stranger under somewhat unusual circumstances. He was the subject of very strong and active delusions to the effect that he was one of the many victims of a widespread criminal conspiracy which pervaded all ranks in society. One night, towards the early morning, he imagined he heard a man outside the door of his room—"one of the devils." With a pistol in hand he followed, as he believed, the man downstairs and out at the front door, where he saw on the opposite side of the street the man Merritt going to his work at the Lion Brewery in Lambeth. Mr. M. went across and deliberately shot him, regarding him as one of the gang of conspirators, and then went and gave himself up to the police. At the trial there was abundant evidence of insanity in the case, and his brother said that the prisoner had sustained a sunstroke and had been confined in an asylum in America. His delusions, curiously enough, prevailed most actively during the night and scarcely ever showed themselves during the day. The police produced a letter which the prisoner had written to them the month before the murder, and in it he said, "My life may be taken any night. I trust your agents are not to be bought over as the American police are." The Lord Chief Justice (Bovill) in his summing up said: "There is evidence here that the mind is unsound, and if the evidence satisfies you that the prisoner at the time he committed the act was not in a state to distinguish right from wrong, and was *not capable of controlling his actions* (the italics are mine), then he would not be responsible for the act he committed and you would find a verdict of not guilty on the ground of insanity." The jury returned a verdict in those terms, and the prisoner was placed in Broadmoor, where his delusions continued very active and led years afterwards to his mutilating his own person rather than yield to the uncleanly demands which the "conspirators" made upon him.

The following is a case of delusion of another description.

J. H., a labourer, murdered an old woman under the superstitious delusion that she was an old witch who had "looked upon" him and tormented him day and night and injured his health; and he justified his act by quoting texts of Scripture, and especially one in Leviticus where it says, "A man also or woman that hath a familiar spirit, or that is a wizard, shall surely be put to death," &c. The farmer who captured him gave evidence that prisoner said there were 15 or 16 damned witches in the parish; he had killed one, and he would kill the rest. The governor of the prison stated that the prisoner never appeared to think he had acted against the law in killing the woman, and that he seemed to think he had merely done his duty because she was a witch. The judge in his summing up said (and I think rightly) that he doubted very much whether there was in this case much of the impulse spoken to by the medical gentlemen; and that from the way in which the prisoner had spoken of the witches and of his intention he thought it was much more a case of intention. After a few minutes' deliberation the jury returned a verdict of "Not guilty on the ground of insanity."

A drinking bout is no doubt a frequent cause of the culminating incitement to murder in these cases of delusion when the pre-existing exaltation reveals no such pronounced indications as would in themselves lead us to anticipate the homicidal act. In other, non-drink, cases there may be no marked behaviour of an excited or noticeable sort; but the delusive idea may be carried out under a quiet, steady, fixed determination.

Homicidal mania and homicidal impulse are unsatisfactory and for the most part unjustifiable phrases or terms made use of when a prisoner who has undoubtedly committed the murder is uncommunicative as to details or says he has no recollection whatever of the circumstances or of the act, giving and leaving the impression that at any rate there was no motive even if he was guilty. In these cases, with few exceptions I should say, prolonged examination or prolonged observation, where the case is a genuine one, has revealed the existence of delusions or other indications of the insanity of which the murder was the outcome. In cases of this sort it was by no means an unusual experience among inmates of Broadmoor to find that the individual had struggled with himself for weeks or months against committing the act which he ultimately did commit under the overpowering influence of definite delusion.

(*b*) *Delusions in conditions of mental depression*, where, in women for the most part, there is an insanely exaggerated extension of religiousness and foreboding, accompanied by an overpowering sense of personal unworthiness and unfitness to live. In a mother the resulting actively suicidal ideas are apt to become associated with a strong morbid feeling that it is her bounden duty to her child not to leave it behind her to live the horrible life as pictured by her anguished mind, or it may be that she hears the voice of God telling her that it is her duty. In any case she takes the child's life, and in so doing it often happens that her death-dealing hand is stayed from carrying out the intended suicide. The great frequency with which these infanticides occur is illustrated by the fact that of 181 female homicides who were detained in Broadmoor during the year 1911 as many as 154 had taken the lives of their own child or children; and it is evident that a somewhat similar condition of mind is not uncommon in men, as 54 men had murdered their own child or children out of the 303 men so detained for murder.

Murder under these circumstances—i.e., where an atmosphere of melancholy and foreboding becomes accentuated into an overpowering and insane sense of dejection and self-recrimination—more often than not occurs in the morning, while the opposite condition, revengeful suspiciousness and insane aggressiveness and excitement, involving captious self-assertion, possibly under the influence of drink (exaltation), is more likely to lead to murder late in the day or after midnight hours. The occasional *morning* evanescent wave of gloomy dejection and the occasional ultra-roseate and absurdly sanguine *evening* point of view are phases of self-introspective experience not unfamiliar to our normal selves. If either of these phases were to last on indefinitely and persistently we would in time become unfit for our work, and goodness knows what might happen.

OBLIVIOUSNESS OF THE ACT (AMNESIA—FORGETFULNESS—LOSS OF MEMORY).

This is often had recourse to as an expedient by prisoners in cases of murder, but it is an indication fraught with the gravest suspicion, and medical men ought to place no reliance upon it as a sole indication that the case is one of epilepsy or insanity. The prisoner usually, in time, and when it suits him, is able to give a detailed account of the circumstances. Single and simple automatic acts are often completely forgotten in drink or epilepsy; but I am bound to say that in all my experience I have never been able to satisfy myself in any case of drink or insanity, where murder has been committed, that the recollection of a series of purposive and exceptional acts extending over a number of hours and involving preparations for the murder and including all the circumstances of the act itself has been absolutely and completely obliterated from the memory. Confusion and incompleteness of memory regarding some portion or portions of the circumstances connected with the act may certainly occur, but that is a totally different matter.

B. W., a soldier, was under sentence of death and afterwards hanged at Chelmsford for the brutal murder of the woman he was keeping company with. Sir Richard Brayn and I held a statutory inquiry by direction of the Home Secretary. At the commencement of our interview prisoner assumed an aspect of stupidity and an incapability to understand our questions on the most ordinary matter of everyday life, and his replies were disjointed, calculated, and evasive. Later, however, he gave up this attitude and talked more to the purpose on subjects that had no connexion with the murder itself. He told us about meeting and walking with the deceased on the evening of the murder. As we approached the circumstances leading up to the murder he completely "dried up," and indignantly and persistently denied having murdered her, avowing that he had no recollection whatever of the allegations made against him. We told him that the judge and jury were satisfied of his guilt and that he had better think it over during the night and tell us about it in the morning. He, however, left us with an offended air, saying his word had never been disbelieved before. In the morning, after we spoke to him of the seriousness of his position, he broke down and told us in detail how he carried out the murder.

H. W., a drink case without insanity, but with assumed obliviousness. This was a very bad and complicated murder case where, having, against my own convictions, been persuaded by the prisoner that he had no recollection of the murder or the circumstances connected with it, I gave evidence to that effect at the trial, saying that although much under the influence of drink he was not insane. He was found guilty on abundant evidence and sentenced to death. Being anything but satisfied on the obliviousness in the case I obtained permission from the Home Office to have another interview with the prisoner. I reasoned with him for a long time and it was not till I caught him tripping that he gave way and told me the whole details of the murder in every particular, working himself up into a state of great excitement.

MALINGERING, IMPOSTURE, FEIGNED INSANITY, ETC.

Malingering, imposture, and feigned insanity have to be guarded against, as they are sure to be "tried on" in many cases. They require tactful dealing when suspicion arises. As a rule the prisoner overacts the part and gives himself away. Medical men should not be too ready to see insanity and give the prisoner the benefit of the doubt merely because they feel that protracted examination may prove useless. The impostor not infrequently excites suspicion by a habit of repeating the words of the question put to him in order that he may have time to think what is the best kind of answer to give. Besides this, there are many little things in the manner of the prisoner and his mode of response that contribute to detection.

A. B. was convicted and afterwards hanged for the murder of a woman with whom he had cohabited for years. A plea of insanity was set up and the superintendent of the asylum and the medical officer of the prison gave evidence that he was insane. He was, however, sentenced to death. Sir Richard Brayn and I held an inquiry and found that the indications of paralysis and imbecility were feigned. We reported to the Home Office that he was an impostor. The medical officer of the prison said he certified insanity because the

asylum superintendent had done so and because he "hated these hanging jobs."

A family history of insanity (often of the flimsiest sort), which is often advanced by well-meaning relatives and doctors, cannot be regarded as being of value in helping us to ascertain the prisoner's condition of mind at the time of the murder or his motive or object in committing it. If we first find the man to be insane, such a family history may come as corroborative and be useful later on in dealing with him.

Anomalous predisposing causes are also urged as evidence of mental derangement. Convulsions (fits) when teething, blows on the head and injuries when at school, severe effects of scarlet fever, measles, &c., are seldom any helpful guide to us in medico-legal cases. When a prisoner has advanced to manhood or middle-life, has married and taken up positions of responsibility, childhood troubles rarely weigh for much.

Multiple murders and murder with attempted suicide must each be taken on their merits: different values *qua* insanity being given according to the circumstances of the case and the mental condition of the prisoner, and the motive where found.

Provocation and premeditation are points that have to be considered in any complete statement of the circumstances under which a murder has been committed.

REMARKS ON THE TREATMENT OF BRAIN TUMOUR.[1]

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I PROPOSE simply to make a few remarks upon the application of the principles of surgery to the treatment of tumours of the brain. Before doing so I should like especially to express my indebtedness to the writings of Professor Cushing. Whatever he may have gained from his early work in London, we may say with truth that he has returned to us a good measure, pressed down and running over. The right procedure to adopt in treating a tumour of the brain differs according to whether we have to deal with a granuloma, a simple tumour, or an infiltrating growth of malignant type. Sir David Ferrier, in an address given at Edinburgh in 1898, said "the treatment of intracranial tumours forms a rather melancholy chapter in therapeutics." This is not his view or our view to-day. It is still not infrequent to hear pessimistic remarks made concerning the results of operations for tumour of the brain. A consideration of the records shows that there is no justification for this pessimism; it is indeed the view of ignorance.

When first brain tumours were removed and a flourish of trumpets proclaimed this great surgical feat the public and the profession were led away by the hope that the surgeon had at last control over these dread diseases. The truth must be recognised that we surgeons cannot do more for tumour when situated in the brain than when situated in any other organ of the body, say the breast or the tongue. The removal of a simple encapsuled tumour results in cure with restoration of function, in the brain as elsewhere. The question of dealing with an infiltrating malignant tumour is much more complex. It cannot be eradicated without removing the organ in which it is growing. The function of the organ in which the tumour is growing and its importance to continuing life has an abiding influence on the nature and extent of possible surgical treatment. For malignant disease of the breast or the tongue the whole organ may be removed, but no one in his senses has yet proposed to do a hemicerebrectomy for malignant disease in one cerebral hemisphere. Malignant disease of the uterus cannot be removed so as to retain the function of child-bearing or even menstruation, but the sacrifice of function can here be made without grave detriment to the individual. It is otherwise in the brain; the function of the part concerned may have been destroyed by the tumour, but such a function as speech is of incalculable value, and in planning an excision operation for brain tumour no operation which may cause loss of speech is justifiable.

In Professor von Eiselberg's paper published 18 months ago, in which he gives the results of 100 operations for brain tumour, the opinion is expressed that "early diagnosis and early operation are the great desiderata in cases of brain tumour. The fate of a patient with brain tumour, condemned as he is to horrible headache and inevitable blindness, is so terrible that operation should invariably be done, and that before irreparable damage to the eyes has occurred." It is impossible to express in more striking and appropriate language the view I hold on the treatment of brain tumour. Sir William Macewen and Sir Victor Horsley, the great pioneers in the surgery of the brain, have emphasised the importance of early diagnosis and early operation, and have in striking language urged that the operation should not wait till the classical symptoms of brain tumour have developed. I was present at the Congress in Berlin in 1890, and the words used then by Sir Victor Horsley were much the same as he uses now. These recommendations still fall on barren soil. Some ten days ago a patient suffering from brain tumour was seen by Sir David Ferrier, who strongly recommended a decompressive operation. The friends refused operative treatment, the real reason being that the medical man in charge of the case is insufficiently acquainted with the beneficent effects of decompression operations.

What, then, is the method of choice with rare exceptions in an infiltrating tumour of the brain? There is no doubt in my mind that decompression, not excision, is the right course to adopt. Decompression relieves the symptoms which depend on increased intracranial pressure. The patient is not, as a rule, *in extremis* from the local effects of the tumour, but from the acute syndrome which supervenes, and is made comfortable and safe by a decompressive operation. By a decompression I mean a large craniectomy, best made over the site of tumour. An osteoplastic flap is a mistake. A cranial defect is essential; a cerebral protrusion, as Cushing says, is desirable. The cranial defect must be large and the dura must be opened, otherwise the intracranial pressure will not be relieved. It would be easy to prove this statement by examples. Occasionally when a glioma is of small size and is situated at one pole of the brain the surgeon may be tempted to remove it. The results are the same as in tumours of other parts of the body. Recurrence and non-recurrence seem to baffle prognosis. When operating for cancer, say of the breast or tongue, the surgeon may in the one case have the best reasons to hope for a cure, in the other he may anticipate an early recurrence. In each case he may be wrong: where all seemed well the growth may recur early and kill the patient, while the case which seemed discouraging may prove a great success. So it is in those rare instances in which a malignant growth in the brain can be apparently completely removed. Let me illustrate these remarks by three examples.

CASE 1.—On Oct. 6th, 1912, I operated on a man, aged 25 (a patient of Dr. Sidney Phillips and Sir David Ferrier), for tumour of the right occipital lobe. The localisation did not present any points of difficulty. Under hedonal anæsthesia a large right occipital craniectomy was done. The dura was incised, when it was found that it was adherent over the cortex for an area about the size of a half-crown. On the 16th a large portion of the occipital lobe containing the tumour was removed. The specimen was cut open from the convex aspect—namely, from that aspect where the meninges were adherent. A malignant cyst was exposed, and apparently the excision was carried all round into healthy brain tissue. (Fig. 1). For six months the patient had complete relief. Then small hard lumps were noticed at the periphery of the craniectomy opening, apparently adherent to brain and bone. These lumps have gradually increased in size and a considerable cerebral hernia has formed. In spite of some local distress from the size of the swelling the patient is otherwise well. He has no headache, the sight is good, the mind is clear, and the only impairment of cerebral function is the hemianopsia from which he suffered prior to the operation. The early recurrence of the tumour was due to its having already spread to the meninges. It was necessary to open the dura because of the severe syndrome. I think nothing was gained by the excision of

[1] Intended to have been made during the debate on the Diagnosis and Treatment of Tumours of the Brain at a meeting of the Seventeenth International Congress of Medicine.

this malignant cyst. Probably the disease would have followed the same course if decompression alone had been done, and the same amount of relief would probably have been obtained.

CASE 2.—A girl, aged 9 years, was operated on in June, 1911, for tumour of the left cerebellar hemisphere. On exposure of the cerebellum it was found that the left hemisphere and part of the vermis contained a huge malignant cyst. (Fig. 2.) Partial removal was carried out. The patient is (July, 1913) quite well with the exception that the sight is irretrievably impaired from the atrophy following optic neuritis. There is a considerable bulging through the craniectomy opening. The operation had been postponed too long. This seems to be an example of the temporary or permanent arrest of the growth of a malignant tumour in consequence of the performance of a decompression operation. The meninges were not infected by the tumour before the operation. Partial removal of the tumour in this case does not appear to me to have accomplished more than would have been effected by simple decompression.

CASE 3.—A woman, aged 21 years, was operated on for tumour of the right cerebellar hemisphere in July, 1909. The posterior half of the right cerebellar hemisphere in which the tumour was contained was amputated. (Fig. 3.) The patient is (July, 1913) quite well; though the optic neuritis was very severe before the operation there is now no impairment of vision. The scalp is flat, neither convex nor concave, over the cranial defect. The disease had not spread to the meninges before the operation. The case seems to be a rare example of the complete extirpation and non-recurrence of a malignant cyst of the cerebellum. I doubt whether the same result can ever be attained in malignant tumour of the cerebrum.

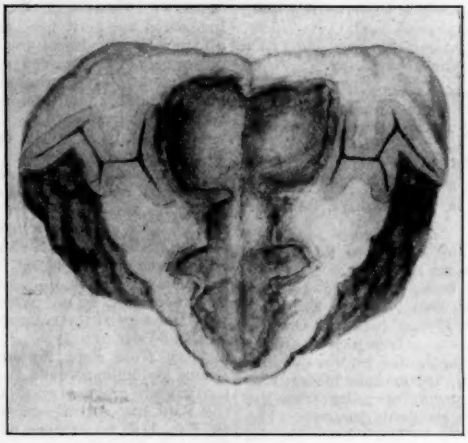
There is one more point of surgical interest to which I should like to refer. We have all used the crossbow incision for exposing the vermis and the inner part of the lateral lobes of the cerebellum. In this operation the occipital bone in the middle line below the external occipital protuberance is removed and the occipital sinus divided. Except in cases in which a tumour is supposed to lie in the anterior part of the vermis or in which exploration of the fourth ventricle is required, it appears to me better not to divide the bone and dura in the middle line, especially in malignant cases, because of the loss of support thereby entailed. It is preferable, I believe, to make two craniectomy openings, one on each side of the middle line if the diagnosis is in doubt. A complete removal of bone over one cerebellar hemisphere gives an ample window, and if both sides are thus treated the cerebellum can be displaced laterally to a remarkable extent.

I think a most important and practical suggestion has been made by Professor Cushing. I mean the recommendation that in operations for cerebellar tumour the foramen magnum should be cut through, and sometimes also the arch of the atlas, as a means of preventing respiratory failure and of restoring natural respiration when this has been arrested.

Lastly, I would add that in the whole range of surgical work the operation of decompression in its various applications has given more relief from pain and distress than almost any other surgical procedure. The truth about operations for malignant disease is that at present, though horribly mutilating, they are our only resource. The time, I hope, will soon come when a remedy will be available which will be antagonistic to the spiritual seed of malignant disease. But even then in the case of malignant disease when situated in the brain, an organ surrounded by an inextensile capsule, decompression will still be required for the immediate relief of the syndrome induced by increased intracranial pressure.

Professor Lucas-Championnière has recently published a treatise on prehistoric trephining. Broca argued that these operations had a ritual or religious object, but Professor

FIG. 1.



Portion of occipital lobe containing a malignant cyst (Case 1). The operation was performed in October, 1912. In April, 1913, recurrence was noticed around the craniectomy opening. Up to the time of writing (July, 1913) the decompression has completely removed the syndrome.

FIG. 2.

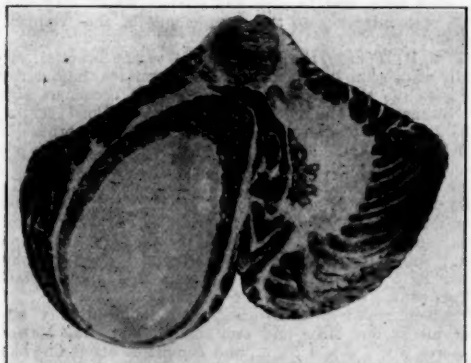


Diagram of large malignant cyst of left lateral lobe of cerebellum. Partial removal and decompression performed June, 1911. Patient is now well, but with nearly complete loss of sight.

FIG. 3.

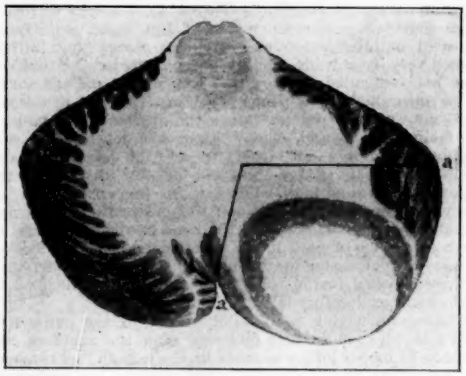


Diagram of malignant cyst of posterior pole of right cerebellar hemisphere. Amputation of portion of cerebellum containing the tumour performed through the lines a-a, July, 1909. Patient is now well, and there is no impairment of sight.

Lucas-Championnière seems to me to have clearly proved that prehistoric trephining was undertaken as a remedial measure. He writes: "Not only do our recent therapeutic views justify the cranial therapy of the Neolithic savage, but the observation of modern savages is well calculated to make us interpret in this way the operations of primitive man." The operation, he says, is carried out at the present day by itinerant operators among the Kabyles of the hinterland of Morocco, amongst the Montenegrins, and perhaps other peoples, as it was done in the Neolithic age. Thus we know that a decompressive craniectomy, which we have only quite recently learned to do, and the value of which, even now, but few doctors appreciate, was an operation performed as a therapeutic measure by our most remote ancestors.

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RUPTURE OF SPLEEN; SPLENECTOMY; RECOVERY.

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THE interest in this case attaches mainly to its history, which I think is instructive and worth recording.

The patient, a rather sparely built boy, aged 13, was admitted to the Colonial Hospital, Port of Spain, Trinidad, on Jan. 16th, 1913, with the following history. On the morning of the 15th while climbing a tree he fell from a height of 16 feet; immediately after the fall he was put into an open boat and taken to the district medical officer, who resides on an island (Cronstadt) about two miles from the fishing village (Teteron) where the accident occurred. The lad was prescribed for and sent back to his home. On the afternoon of the next day at about 4 o'clock, as there was no abatement of the abdominal pain, he was again rowed across to the district medical officer, who ordered him to hospital; this necessitated a further removal by sea—a distance of about 4½ miles. On reaching the landing place (Cocorite) he was transferred into a tramcar and conveyed to the Colonial Hospital, a further distance of some 3 miles, arriving there at 10.10 P.M.

On admission the patient complained of slight abdominal pain and of some tenderness on deep pressure over the umbilical region; the recti muscles were a little rigid, and the abdomen was slightly distended and tympanitic. There was apparently some diminution of the liver dulness; the pulse was 104 per minute and of poor tension; the temperature was 100·6° F. There was no restlessness and there had been no nausea or vomiting. No external marks of injury were detected, and examination of the heart and lungs revealed nothing abnormal. The boy stated that he had passed very little urine since the accident, but his bladder was not distended; some urine was drawn off and found to be clear and free from albumin. As the symptoms did not appear urgent, and the patient complained of feeling tired and sleepy after his journey, it was decided to apply an ice bag to the abdomen and to watch carefully the progress of the case. On the following morning (Jan. 17th) there was apparently no change in his general condition; the pulse-rate was 108 per minute and the temperature 100·2°. In view, however, of the continuance of pain in the abdomen and the presence of dulness on percussion in the flanks—a condition which had not been looked for on the previous evening—I decided to perform an exploratory laparotomy.

Chloroform having been administered to the patient at 9.15 A.M.—i.e., more than 48 hours after the accident—an incision 2½ inches long was made in the middle line between the umbilicus and the pubes. On opening the peritoneal cavity a moderately large amount of dark-coloured blood escaped. The intestines were pulled out and examined, but no evidence of injury was disclosed. As much as possible of the blood was washed out and the intestines were returned. The abdominal wound was closed, and a second opening was made above the umbilicus along the outer border of the right rectus to explore the liver, which was now suspected to be the seat of hæmorrhage, as it was observed that blood continued to ooze from that direction after the peritoneal cavity had been flushed out in the first instance. The liver was found to be intact; the wound was extended, and the hand passed across in the abdominal cavity to examine the spleen. As this organ was felt to be extensively lacerated another incision was made at right angles to the last across the recti muscles in order to bring into view the damaged viscus. This was found to be ruptured into three parts; a small piece was quite free in the peritoneal cavity, another was held merely by a tag of the thickened capsule, while the remaining portion—the largest of the three—was attached to the pedicle. There was still some bleeding going on. The pedicle was clamped, the organ excised, and the stump tied with a silk ligature. There were no adhesions to complicate the operation. After irrigating the peritoneal cavity with hot salt solution until all trace of blood was removed, the abdominal wound was closed, about two pints of sterile salt solution being left in. The spleen (three pieces) weighed 8 oz.; it was firm, dark, and pigmented, indicating chronic malarial infection; the capsule was thickened.

Immediately after the operation the temperature rose to 101·2°, and the pulse ran up to 130 per minute. For six days after the operation the temperature varied from 99·2° to 103·6°, and the pulse from 76 to 136 per minute. On Jan. 23rd the temperature fell to normal and remained so. On the 21st and the following day the pulse was irregular. On the 26th there were sudden and well-marked variations in its frequency, ranging from 60 to 92; this persisted for three days. From Jan. 30th to Feb. 1st the pulse-rate remained at 62–66 per minute, and from the latter date until the discharge of the patient on March 6th it varied between 70 and 84 per minute.

Apart from some suppuration which was observed in the second abdominal wound on Jan. 22nd and lasted a few days, the patient made a good and satisfactory recovery. From the 23rd his convalescence was rapid and uninterrupted. On Feb. 11th he weighed 83 lb. On Feb. 18th he had gained 1 lb. On Feb. 23rd he showed a further gain of 4 lb., and on March 4th—two days before his discharge—he weighed 92 lb. His detention in hospital after three weeks was for purposes of observation.

The after-effects of the removal of the spleen were carefully watched, but no special sign or symptom followed except the condition of the pulse referred to above and the blood changes to be described presently. None of the post-operative symptoms which have sometimes followed splenectomy—viz., rapid emaciation and debility, great thirst, a persistently rapid pulse, intermittent elevation of temperature, great anæmia, drowsiness, peevishness and irritability of temper, griping pain in the abdomen, and enlargement of the lymphatic glands—have been observed, so far, in this case. I propose, however, to follow up the further history for some time, and to note any change which may show itself with reference to the enlargement of the lymphatic glands.

Dr. J. R. Dickson, the bacteriologist to the hospital, very kindly made some blood examinations at various times during the patient's stay in hospital and on two occasions after his discharge. He reported as follows:—Blood counts: Feb. 1st—Red corpuscles, 3,850,000; white corpuscles, 10,000. Feb. 21st—Red corpuscles, 2,739,682; white corpuscles, 16,000. March 3rd—Red corpuscles, 2,968,182; white corpuscles, 20,000. March 26th—Red corpuscles, 4,384,000; white corpuscles, 18,000. May 7th—Red corpuscles, 4,000,000; white corpuscles, 11,000. Differential count: May 7th—Polymorphonuclears, 50·8 per cent.; small lymphocytes, 13·4 per cent.; large lymphocytes, 27·5 per cent.; mononuclears and transitionals, 3·8 per cent.; eosinophiles, 4·5 per cent.

"Spleen ruptured transversely and longitudinally into three pieces, one large and two small. The large portion measures 9 × 7·5 × 4·5 cm., and comprises about one-half of the organ. The small pieces measure 5 × 5·2 × 3 cm., and 5·5 × 4·5 × 2 cm. The smaller piece is very ragged, is not covered by capsule, and appears to have been torn out of the substance of the organ. On section the capsule was thickened; the trabeculæ were hypertrophied, and throughout the pulp were irregular masses of blackish pigment and a general infiltration of leucocytes; the pulp was swollen, the Malpighian corpuscles were rather indistinct, and much of the pulp tissue stained badly and appeared to be degenerating."

Remarks.—1. The absence of urgent symptoms even after the lapse of 48 hours, considering the extent and gravity of the lesion, is worthy of note. 2. It seems remarkable that

death did not ensue from hæmorrhage, considering the fact that the patient was removed from place to place over a considerable distance before his admission to hospital. 3. The condition of the pulse—viz., its irregularity, sudden variations, and slowness at various times—was an interesting feature in this case. 4. The absence of post-operative sequelæ reported in other cases is also noteworthy.

On looking up the literature at my disposal I find it is stated that removal of the spleen was practised for the first time by Zuccarelli (Saccharelli) in 1554; if so, it would appear that the operation fell at once into disfavour, for there is no record of its repetition until more than three centuries later, when M. Péan, of Paris, successfully extirpated a cystic spleen in 1867. Since that time the operation has been performed for various conditions and has become a well-established surgical procedure. Up to a few years ago, however the mortality rate was high; in 1887 it seemed to have been as high as 73 per cent.; Cecil in 1894 estimated it at 51·6 per cent. Since that date there have been decided improvements in the results, due largely, I think, to the abandonment of the operation for splenic leukæmia and other unfavourable conditions which proved almost invariably fatal. In 1906 B. B. Davis was able to place the mortality at 18 per cent.

As regards the removal of the spleen for rupture Reigner recorded in 1893 the first successful case. In 1902 Berger had collected from the literature 69 cases of this nature, with 29 deaths—a mortality of 42 per cent. In 1906 Horz had obtained the reports of 35 additional cases with a mortality of 29 per cent. Splenectomy consecutive to wounds of the organ has therefore been attended with a fair measure of success; in any case it is, beyond doubt, the most rational and hopeful treatment, especially when it is borne in mind that the mortality in the unoperated cases has been computed to be more than twice that of the cases in which splenectomy has been performed.

Port of Spain, Trinidad.

ANÆSTHESIA IN ACUTE INFLAMMATIONS OF THE MOUTH AND PHARYNX.

BY T. B. LAYTON, M.S. LOND., F.R.C.S. ENG.,

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I WILL first consider what are the operations likely to be performed and the conditions under which they must be done. The operations are those for the incision of abscesses or other inflammatory conditions, for the removal of teeth, and tracheotomy. The pathological conditions include those definitely arising from disease of the teeth and those where the infective agent has gained an entrance presumably through the mucous membrane, though here, also, the teeth are possibly the original cause.

The inflammations definitely associated with the upper teeth are abscess and suppuration of the maxillary air sinus. The abscess usually forms to the outer side of the alveolus, bulges out the cheek, and causes œdema of the lower eyelid; from the lateral incisor and from the palatal fangs of the first pre-molar and of the molar teeth a palatal abscess may arise. From the lower teeth the abscess may form on the outside of the alveolus, where it causes the swollen face most often seen; or more rarely it forms internal to the ramus in the floor of the mouth. In all these conditions extraction of the offending tooth is the operation which must first be done, and often the only one necessary.

If sufficient precautions be taken gas may safely be given in all these conditions with the exception of the last. The precautions to be taken are three: the anæsthesia must be short, cyanosis must be prevented, and the position of the patient carefully chosen. The dentist or surgeon must realise that time is only given for one manipulation—one incision and search with the director for the surgeon, one tug only at the tooth for the dentist; the latter will not have time to take a second grip of his tooth, nor to remove a second if the first is the wrong one. Cyanosis must carefully be guarded against, because it is specially likely to occur. In addition to the swelling in the mouth the whole mucous membrane of the respiratory tract is inflamed with an attendant swelling and increased exudation of mucus. Cyanosis can best be guarded against by giving the gas slowly mixed with air or oxygen, and by correcting it as soon as it begins rather than allowing a deep degree to occur. The position of the patient should be upright or leaning forward, so that the moment the tooth is drawn or the cut made he can be leaned more forward and the pus flow out of the mouth. In operating on a fang far back in the upper jaw with a mouth but partially open the dentist will like the head well back, but if he ask for it the anæsthetist must strenuously oppose it.

With these three precautions gas may be given in the majority of abscesses associated with the teeth. The last one mentioned is, however, different and must be ranked with the pathological conditions next to be mentioned. These include those abscesses which bulge into the respiratory tract behind the mouth or those inflammations of the cellular tissues which are associated with so much swelling of the mucous membrane that there is dyspnœa or some danger of it. In the former the danger lies in the abscess bursting into the respiratory tract; in the latter in two things—first, that the dyspnœa will become most urgent during the administration of the anæsthetic; and, secondly, that heart failure may supervene. For these reasons in such cases an anæsthetic should only be given when absolutely essential.

It may be well, however, to epitomise the inflammatory lesions to which I refer: (1) The uncommon abscess of the tongue; (2) the common peritonsillar cellulitis or quinsy; (3) the retro-pharyngeal abscess bulging forward into the pharynx; (4) the diffuse cellulitis of the fascial planes of the floor of the mouth and mid-line of the neck; (5) the large deep-seated abscess of the neck in relation with larynx, pharynx, and carotid vessels. These last two I believe most usually to be due to the teeth and to be a further stage of the abscess internal to the jaw which I have mentioned above. Lastly, there is the acute septic inflammation of the pharynx, which sometimes calls for tracheotomy. In all of these conditions an anæsthetic is dangerous.

A tracheotomy can be done under a local anæsthetic; similarly can a deep-seated abscess be opened by the small-incision method or a cellulitis be incised. With regard to the abscesses bulging into the pharynx, a quinsy should never be opened under an anæsthetic; it presents no difficulties which call for one, and the risk is too great to give one solely for the relief of pain. Nor should a retro-pharyngeal abscess need one; they usually point in such a position that they can be opened through the mouth. General surgeons have, I believe, recently been opening these through the neck under anæsthesia. While I cannot think this route a good one, they should at least be opened under a local anæsthetic. Abscess of the tongue is a rare condition and my experience is limited to two cases; in both an anæsthetic was necessary because of the extreme tenderness of the organ.

When general anæsthesia is given the choice of anæsthetic is no easy one. Ether stimulates secretion and makes still greater the risk of cyanosis, chloroform is more toxic if heart failure be imminent. I think that this last is the lesser of the two evils, if the chloroform be given slowly and carefully. A preliminary injection of atropine is of advantage, both by diminishing secretion and by lessening the danger of chloroform.

Since writing the above I have had a case which shows the value of Killian's suspension laryngoscope in applying these principles. The patient was a man, aged 50, who complained that he had had some symptoms of abnormal sensation on swallowing for eight weeks, which had become an actual difficulty during the past three weeks. At the back of the pharynx was a swelling three inches long by one and a half across, smooth, tense, and resistant to the touch. He was prepared in the usual way by an injection of scopolamine 1/200 gr. and morphine 1/8 two hours previously, and repeated one hour before the examination, and by painting the base of the tongue and epiglottis with cocaine. He was then suspended, and the ease with which the exact site, appearance, and dimensions of the lump could be determined was most pleasing. The surface was painted with novocaine, and an exploring syringe being introduced pus was drawn off. The abscess was opened by a small incision and sinus forceps, and when the pus had mostly escaped he was sat up. All danger of anæthesia was eliminated, no vestige of pus reached the larynx, and the incision was efficiently made

with a good light which gave a view of the whole mass and the surrounding structures. A pure culture of pneumococcus was got from the pus. The apparatus, which was first described by Professor Killian* in April, 1912, and was demonstrated by him at the recent congress, has already been used considerably by Mr. Haworth† and Mr. E. D. Davis.‡ It is made in this country by Messrs. Down Bros., Limited, St. Thomas's-street, London, S.E.

Queen Anne-street, W.

AVOIDANCE OF SUDDEN DEATH FROM THE INDUCTION OF AN ARTIFICIAL PNEUMOTHORAX.

BY CLAUDE LILLINGSTON, M.B., B.C. CANTAB.

THE records of sudden death from the induction of an artificial pneumothorax are now both numerous and instructive, and the fact that the treatment has gained popularity in spite of these accidents is an index of its therapeutic value. Another sign indicative of the growing importance attached to this treatment is the space devoted to it in the advertisements and prospectuses of many leading continental sanatoriums. The treatment has also been adopted by the most important of the English sanatoriums, and I am not aware of one in which it has been practised and then abandoned, but it is to continental workers we are indebted for the most valuable observations on the various accidents which may occur.

The most serious accidents are pleural reflex, including laryngeal spasm, gas embolism, aspiration pneumonia, and an uncontrollable accidental pneumothorax due to puncture or rupture of the visceral pleura. It is not easy to estimate the incidence of these accidents, for they were more frequent in the early days of the treatment than now, and some operators have been more unfortunate than others. Forlanini in 1912 had performed 10,000 operations on 134 patients, of whom 2 died from gas embolism, and 12 exhibited serious symptoms which were very alarming in 5 cases but never fatal. Saugman in 1913, with an experience of about 5000 operations on 186 patients, had seen two fatal cases at the first injection. Vere Pearson, with an experience of 16 patients, has seen no fatal accident; and I, with an experience of 32 patients and several hundred punctures of the chest, have met with no more alarming symptom than slight shock of a few minutes' duration in one case. More disquieting are the reports of various French and Swedish operators whose fatalities are heavy compared with the number of patients treated. Begtrup Hansen[1] has collected 8 cases of sudden death, and several isolated cases have subsequently been published.

Are these accidents inevitable, or due to faulty technique? The symptoms are numerous and varied, and consist of psychic disturbances, convulsions, ocular manifestations such as amblyopia and diplopia, mono- and hemi-plegia, rapid and irregular action of the heart and lungs, and mottling of the skin. These conditions may disappear after a few hours to several weeks' duration, or they may rapidly terminate in death. Forlanini attributes them to pleural reflex in most cases, and to gas embolism in a few cases. Brauer, however, attaches more importance to gas embolism than to pleural reflex. It is now generally admitted that the symptoms of pleural reflex are not clinically distinguishable from those of gas embolism; and even a skilfully conducted necropsy may not be decisive, for a fatal dose of gas may have escaped from the blood-vessels of the brain before these can be examined, and, on the other hand, air may enter the blood-vessels during a necropsy, or gas may be generated in small quantities in them post mortem (Carl Sundberg).[2]

Gas embolism.—The bubbling sound heard when air has been drawn into a vein during an operation on the neck has never, apparently, been heard in cases of sudden death after thoracentesis; and it is also a stumbling-block to the supporters of the "embolism" school that certain mammals tolerate large intravenous injections of air. But though the importance of gas embolism may possibly have been overrated, even Forlanini[3] regards it as a complication which may be fatal. In a case recorded by Brauer,[4] a colleague attempted to induce a pneumothorax in a girl, aged 18, by Forlanini's method. In spite of a motionless manometer, 100 c.c. of gas were forcibly injected into the chest. The patient lost consciousness, bilateral convulsions appeared, and death followed six hours after the injection. The necropsy showed small bubbles of gas uniformly distributed throughout the capillaries of the brain. The injection of gas in the absence of manometric oscillations was clearly responsible for this fatality.

In many cases of sudden death traced by the operator to embolism difficulties have been experienced in finding free pleura—the manometer has remained motionless, or there have been slight oscillations of 1 to 2 cm. of water. The operator has now forced in gas under high pressure with a view to breaking down pleural adhesions. This procedure has occasionally been successful, and I have once adopted it at the urgent request of a patient whose disease was advanced and active, and who was prepared to take the risks involved. Ultimately a large pneumothorax was induced which rapidly reduced the fever and expectoration, and the patient, who is now under the care of Dr. Leonard Colebrook, is two years later doing well. But in view of recent fatalities due to this procedure I have not repeated it of late; and even with a large pneumothorax and characteristic manometric oscillations I do not inject gas under a pressure exceeding 20 cm. of water. A somewhat higher pressure may be used in a partial pneumothorax. With a high pressure it is conceivable that, even if gas embolism does not occur, a pre-existing thrombus in a tuberculous area of the lung may become squeezed out and give rise to embolism, and this may be the cause of the hemiplegia which has occasionally been observed a few hours after an injection.

Brauer maintains that gas embolism may occur without the introduction of gas through the needle, provided it has wounded a blood-vessel in the lung. It certainly is conceivable that a negative pressure may exist in a pulmonary vessel surrounded by tuberculous tissue underlying pleural adhesions (see Dr. W. Parry Morgan on the physics of a tuberculous lung, THE LANCET, July 5th, 1913), and if this be so, air under atmospheric pressure might enter from the bronchi were the vessel wounded. But were a pulmonary vessel capable of aspirating air through a lesion of its walls, gas embolism should follow hæmoptysis, but there is only one such accident recorded.[5] With careful technique there is no risk of gas embolism in the absence of pleural adhesions, the risk is negligible in cases of partial adhesion of the pleura, and it is considerable if the operator chooses to break down universal pleural adhesions in the absence of manometric oscillations.

Pleural reflex.—The following case of fatal pleural reflex is recorded by Professor Carl Sundberg[6]:—

> A woman, aged 28, suffered from pulmonary tuberculosis of the right lung for which an artificial pneumothorax was prescribed. The puncture method was employed, and seven injections of air, amounting altogether to 2550 c.c., were given; but the air did not, apparently, reach the intrapleural space. At the eighth injection the manometer showed a negative pressure of 2 cm. of water, but no oscillations. Before any gas had been injected the patient suddenly fainted, convulsions appeared, and death occurred 36 hours later. The necropsy showed no wound of the lung at the site of the injection, and no air in the heart or blood vessels. The pia mater, the cortex, the central ganglia, and the medulla were markedly hyperæmic. In the cortex of both cerebral hemispheres were numerous foci of softening, both anæmic and hæmorrhagic. The microscopic examination showed recent hyaline and granular thrombosis and commencing leucocytic emigration.

The author attributes this condition to reflex spasm of the cerebral arteries, inducing ischæmia followed by thrombosis. He has also recorded the following case:—

> A man, aged 49, died three hours after the twenty-second injection of gas into a large pneumothorax. The initial pressure in the pneumothorax varied between + 3 and + 7 cm. of water, and rose to + 50 cm. of water after 300 c.c. had been injected. In 2 to 3 minutes severe dyspnœa, pallor, and a cold sweat broke out, and there was overaction of the accessory muscles of respiration. The inspiratory dyspnœa was unaccompanied by nervous phenomena or loss of consciousness. 400 c.c. of gas were withdrawn, the pressure falling from + 20 to − 3. This caused only temporary improvement. The necropsy showed that the surface of the collapsed lung could not even have been touched by the pneumothorax needle owing to the size of the pneumothorax, the distance between the puncture in the parietal pleura and the lung being 8 cm. The pons and medulla showed marked hyperæmia and degeneration of ganglion cells; but the condition to which Sundberg attaches the most importance was the post-mortem closure of the rima glottidis, and he considers it probable that spasm of the adductor laryngeal muscles or paralysis of the abductor muscles was the cause of death.

Were these two deaths inevitable? In the second case a pressure was created within the thorax far higher than is

* Archiv für Laryngologie und Rhinologie, Band xxvi., Heft 2.
† Proceedings of the Royal Society of Medicine, 1913, Laryngological Section, p. 70.
‡ Brit. Med. Jour., Jan. 18th, 1913.

now generally used; and the case is somewhat like that observed by a friend of mine who, by a mistake in the reading of the manometer, doubled the desired intrapleural pressure. His patient was unconscious for several days, but ultimately recovered. There is no reference to the use of anæsthetics in Sundberg's detailed account of his two cases. It is therefore possible that these deaths might have been averted by the use of local anæsthetics, the importance of which is illustrated by the following case quoted by Forlanini:[7]—

> The patient suffered from pleurisy with effusion. Gas was injected into the hydrothorax, and was plainly heard bubbling through the fluid. After 250 c.c. had been injected convulsions appeared. They recurred two days later when the operation was repeated. Before the next four injections the pleura was anæsthetised, and no convulsions were observed. At the seventh injection the anæsthetic was dispensed with, and alarming symptoms followed.

In this connexion it should be remarked that the bubbling of gas into a hydrothorax is unadvisable, unless as much fluid is withdrawn as gas is injected. Otherwise, the intrapleural pressure may be raised to a dangerous degree, and the point of the needle being in the fluid the manometer does not oscillate or indicate the pressure within the thorax. When a pleural effusion exists it is sometimes advisable to use two needles simultaneously, one in a dependent part of the thorax to drain the fluid, and one at a higher level to inject gas and gauge the intrapleural pressure.

Still more instructive are Forlanini's experiments on 16 rabbits into whose pleuræ irritants were injected. Convulsions appeared in seven, three of which died. None of the 12 rabbits whose pleuræ were anæsthetised previous to the injection of irritants developed convulsions. In addition, therefore, to the avoidance of high intrapleural pressure, it is advisable to employ local anæsthesia at every first injection, and subsequently at every injection if the patient show signs of abnormal reflex excitability. Before every "refill" I now give omnopon by the mouth; the immediate and after-effects of this drug are preferable to those of pure morphia.

The following "don'ts" may be briefly mentioned: 1. Don't inject gas without satisfactory manometric oscillations, or at a pressure exceeding the atmospheric pressure when beginning a first injection. 2. Don't spare anæsthetics. 3. Don't create a high intrapleural pressure. A pressure of 40 cm. of water may cause no discomfort during an injection, but it may be more than doubled by a subsequent fit of coughing, and a leak may thus be sprung in the pneumothorax. 4. Don't induce a pneumothorax during menstruation when reflex excitability may be raised. 5. Don't puncture on the first occasion in many different places in a search for free pleura; patients have collapsed after the sixth or seventh puncture who have tolerated the first punctures well. It is better to continue the search for free pleura in a day or two. 6. Don't inject gas rapidly or at a low temperature. Brauer[8] has once seen symptoms of pleural reflex after the use of cold gas. 7. Don't use large needles or needles with rough surfaces; and don't let the rubber tubing drag on the needle during an injection. 8. Don't inject till the patient's posture is easy and comfortable. 9. Don't hesitate to withdraw the needle at the earliest sign of collapse. 10. Don't operate without brandy and a hypodermic syringe full of ether handy.

Aspiration pneumonia and accidental pneumothorax are rare. The former loomed large in medical literature more than a decade ago, when it was regarded as a serious danger to the uncompressed lung. Begtrup Hansen has collected 5 cases, including one which he has personally observed. In this case recovery was effected after some of the injected gas had been withdrawn. This complication may be a sequel to the rapid induction of a large pneumothorax at the first injection, and it is therefore sometimes associated with hæmoptysis, the arrest of which has been effected by the complete collapse of one lung by a single injection. When a pneumothorax is induced gradually the risk of aspiration pneumonia is negligible, and when violent hæmoptysis requires the immediate collapse of the whole lung the risk of aspiration pneumonia must be taken, and it is slight considering the many cases in which hæmoptysis has thus been successfully arrested.

An accidental pneumothorax may follow the introduction of the pneumothorax needle into a tuberculous cavity. Hence the advisability of introducing the needle at a point where the lung is healthy. Fortunately, when cavities lie near the surface the adjacent pleuræ are usually adherent, and when the pleuræ are non-adherent the visceral pleura and underlying lung are usually so soft and elastic that they become indented without being punctured. When a puncture of the visceral pleura occurs it seldom transmits gas. I must have pricked the lung often, but have not yet seen an accidental pneumothorax follow. This accident may also occur as the result of a too high or a too low intrapleural pressure. When the pneumothorax is not often enough refilled, the intrathoracic pressure falls considerably below atmospheric pressure, and a state of unstable equilibrium is set up. If now the patient takes violent exercise involving great inspiratory efforts, the intrathoracic pressure becomes yet more negative, and air may break through a weak spot in the visceral pleura from the bronchi and into the pleural cavity. If, on the other hand, high intrapleural pressure has been created with a view to breaking down adhesions, a portion of the visceral pleura and lung may be torn away and remain adherent to the parietal pleura. Two such cases, one of which terminated fatally in a few days, have lately been recorded.[9] Forlanini has collected a few cases. The condition may simulate the escape of gas from the pneumothorax into the mediastinum, when relief can be obtained by aspirating gas from the pneumothorax. But when an accidental pneumothorax has occurred aspiration is futile if the escape of air into the pneumothorax continues.

Conclusion.—Most cases of sudden death from the induction of a pneumothorax are due to errors of technique. With care these accidents should be extremely rare, and they should not prevent the adoption of the treatment in suitable cases.

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Gorleston-on-Sea.

DEGENERATION OF THE NUCLEUS LENTIFORMIS, ASSOCIATED WITH CIRRHOSIS OF THE LIVER.

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UNDER the title of "Progressive Lenticular Degeneration," S. A. K. Wilson has recently described a series of cases presenting a peculiar symptomatology and revealing at necropsy characteristic lesions. For a detailed description of the disease the reader is referred to his papers,[1] but the important features are described below.

The disease is "familial in the sense that it frequently attacks more than one member of a family, but is neither congenital nor hereditary." It always occurs in young people and is invariably progressive and fatal. The symptoms form a characteristic syndrome. They are: (1) bilateral involuntary movements of the extremities, sometimes also of the head and trunk, of the nature of a rhythmical tremor, increasing with volitional movement; (2) pronounced spasticity, or rather hypertonicity of the musculature, generally the face being set in a spastic smile, while the limbs are in contracture; (3) in the later stages of the disease true contractures set in; (4) dysphagia and dysarthria due to rigidity of the corresponding muscles; (5) a degree of emotionalism, the patient responding abnormally to slight stimuli; (6) there is little or no true paresis or paralysis, the patient being able to perform ordinary movements at all joints, although slowly or feebly—the reflexes are intact; and (7) transitory mental symptoms are present in some cases. The symptoms are, therefore, of a motor nature, and are extrapyramidal in origin. This symptom-complex, Wilson believes, constitutes the syndrome of the corpus striatum.

The morbid anatomy is no less characteristic than the symptomatology. There is a bilateral symmetrical softening of the nucleus lentiformis associated with cirrhosis of the

[1] THE LANCET, April 27th, 1912, p. 1115; Brain, vol. xxxiv., p. 295.

liver. The softening affects the putamen, and to a less extent the globus pallidus. The caudate nucleus, optic thalamus, and internal capsule are not involved. The disease commences apparently around the lenticulo-striate vessels, as a result of which the lenticular nucleus begins to shrink and atrophy, the laminæ medullares and internuncial fibres become less and less recognisable, while the nerve cells disappear and neuroglial overgrowth takes their place, but it in its turn tends to break down, so that in advanced cases softening and cavity formation are the result. There is no sign of syphilitic disease of the blood-vessels, all of which are patent. Occasionally petechial hæmorrhages occur. Even where the cavity formation is advanced there is no evidence of obliterative endarteritis; on the contrary, the vessels are sometimes thin, fragile, and hyaline-looking. The internal capsule in an uncomplicated case is intact.

The cirrhosis of liver is an essential part of the morbid anatomy, being constantly present. It is peculiar in that it produces no symptoms during life. The cirrhosis is of a mixed type. It is principally multilobular, in some places being monolobular and occasionally there are indications of intralobular cirrhosis. In the liver substance normal areas, necrosed areas, areas of fatty degeneration, and actively regenerating areas are found to be scattered irregularly through the organ. Syphilis and alcohol appear to be definitely excluded as factors in the production of this cirrhosis.

Wilson was able to collect 12 cases. Six had been previously reported, 2 by Sir W. Gowers in 1888, 1 by Ormerod, and 3 by Homén in 1890. Wilson personally observed 4 cases and obtained the unpublished records of 2 others. Necropsies were obtained in 10 of these 12 cases; in 3 of the older cases no definite findings in the central nervous system are recorded, but in the other 7 cases various stages of the lesions described above were constantly present.

Since the publication of Wilson's paper, two more cases have been reported, one by L'Hermitte,[2] and one by Yokoyama and Fischer.[3] The former occurred in a boy 11 years old, who suffered principally from motor disturbances in the domain of the bulbar nerves, dysphagia, dysarthria, and a spastic smile. There were occasional spasmodic contractions of the muscles of the face, and the arms became involved so that writing was impossible. Later the patient was reduced to a state of extreme helplessness by the spastic condition of the musculature generally, although true paralyses were absent. Finally, there occurred a mental deterioration and epileptiform seizures with marked emaciation. At the necropsy there was found a marked atrophy of the corpus striatum with degeneration of the putamen of the lenticular nucleus. The vessels were healthy. The liver showed a degree of cirrhosis evident to the naked eye. Microscopically the fibrosis extended from the portal spaces, cutting the liver substance into islands, sometimes of several lobules, at other into portions of a lobule.

The second case was less typical. The patient, a girl 19 years old, suffered from dementia and disturbances of speech and gait. Her illness extended over five years. At the necropsy the liver was found to be enlarged and nodular, the nodules being large and irregular in size, so that externally it resembled a syphilitic cirrhosis. Microscopically, however, no evidences of syphilis were found. In the central portions of the nodules large necrotic areas surrounded by a hæmorrhagic inflammatory zone were present. The brain showed a loss of nerve fibres with gliosis in the cortex, particularly in the frontal region, and the same condition was, to a lesser extent, present in the left lenticular and caudate nucleus. The right nuclei were not involved. There were no vascular changes.

The case here reported bears little clinical resemblance to those described by Wilson, but the necropsy findings of cirrhosis of the liver associated with bilateral symmetrical hæmorrhages and softening of the nucleus lentiformis are interesting when considered in connexion with his reports. It was impossible to obtain a detailed history, but the essential points are given. I am indebted to Dr. J. D. Heard for the clinical notes of the case. The patient was admitted to the medical wards of the St. Francis Hospital on Dec. 1st, 1912. She was a corpulent woman, 53 years old, and complained principally of general muscular weakness of some weeks' duration, apparent chiefly in walking; at times her knees gave way and she was afraid of falling. She also complained of dyspnœa and headaches for some weeks. She gave a marked personal and family history of alcoholism. There was no history of jaundice or ascites. On admission her mind was not clear, and during her stay in the hospital mental symptoms were almost constantly present, she being commonly irrational, suffering from hallucinations, and at one time verging on delirium tremens. At times she showed irregular purposeless movements of the hands, but marked tremors were absent. Towards the end of her illness the patient became extremely weak and helpless, voiding urine and fæces involuntarily. She had extreme dyspnœa with some cyanosis, and finally became stuporous. Physical examination on admission revealed little, save an enlarged liver. The temperature was normal except for a rise just before death. Lumbar puncture on Dec. 15th yielded a fluid under slightly increased tension. The Wassermann reaction was negative with both blood serum and spinal fluid. Death occurred on Dec. 16th, 1912.

At the necropsy the liver was found to be considerably enlarged, weighing 2170 grm. and measuring $26 \times 22 \times 10$ cm. The lower border was covered by fibrous adhesions and was rounded. The entire surface was finely nodular. On section the liver was seen to be cut up into small nodular masses of fairly uniform size which varied from that of a match-head to a pea. These nodules bulged above the cut surface and were separated from each other by fine fibrous bands. The liver tissue throughout was of a pale yellow fatty colour showing here and there a very slight amount of greenish bile staining. The gall-bladder contained one large oval stone. The bile-ducts were negative.

Sections of the liver showed a general increase in connective tissue, which was most marked about the portal systems. This fibrous tissue was fairly dense, although the individual bands were narrow. It showed in places a number of young connective tissue cells, and there was a diffuse infiltration by lymphocytes throughout it. Within these bands of fibrous tissue numerous pseudo-bile capillaries were present. These bands of connective tissue tended to surround the individual lobules, although in places there were areas where the liver substance was subdivided by the invading connective tissue into islands of but a few cells each. The liver cells showed a most marked fatty change, but few cells escaping. Most of the cells showed clear, well-stained nuclei, and necrosis could not be demonstrated. Externally the brain appeared quite normal, but on section there was found in each of the lenticular nuclei a small area about 1 cm. in diameter which showed numerous small punctate hæmorrhages. These areas occupied the anterior portion of the putamen, in its outer and inferior parts, and were practically symmetrical. The tissue about the hæmorrhages was paler, œdematous, and softened. These areas were confined entirely to the lenticular nuclei; the internal capsule appeared quite normal, the caudate nucleus and optic thalamus showed no change. The rest of the brain was completely negative. The vessels at the base of the brain were free from sclerosis.

Microscopically the lenticular nucleus showed the presence of many small hæmorrhages around the capillaries. In places the hæmorrhage was quite extensive and was found to infiltrate the tissue at some distance from the vessels. The hæmorrhage was of recent origin, and the red blood cells which had escaped were for the most part well preserved; no old blood pigment was noted. The hæmorrhage was not accompanied by an inflammatory reaction. About the vessels, even in the absence of hæmorrhage, the nerve tissue showed areas of degeneration, being more faintly stained, and having in general a rarefied appearance, as though some of the fibres had disappeared. The nerve cells showed degenerative changes in their protoplasm, some being vacuolated, while others showed the presence of fine granules which stained deeply with eosin. There was no increase of glia cells. The blood-vessels were all quite healthy, and it would appear that the hæmorrhage was due more to loss of support from without than from actual disease of the vessel wall. The necropsy findings in the other organs were of minor interest and had no apparent relationship to the lesions described.

This case differs from those heretofore reported in that the patient was considerably older. None of the typical symptoms were present; however, the lenticular lesions were not advanced, and the rapid development of a profound

[2] Semaine Médicale, 1912, No. 11.
[3] Virchow's Archiv, Band ccxl., p. 305.

toxic process may have masked or prevented the development of more characteristic symptoms. Her illness began with symptoms of a motor nature—namely, general muscular weakness with a tendency to fall when walking—but unfortunately we had no opportunity to study the case at this time.

It is difficult to say what causes the lenticular lesions. In the absence of an inflammatory reaction one thinks first of impaired nutrition, secondary to circulatory disturbances. The vessels, however, are entirely free from thromboses, emboli, or obliterative lesions; in fact, they appear quite healthy. It further becomes difficult to explain the degenerative changes on the ground of disturbances of circulation, when one remembers that the lenticular nucleus derives its blood-supply from several sources. The earliest changes occur in the tissue immediately surrounding the vessels, and it is probable that there is some circulating toxin at work which has a peculiarly selective action for these tissues.

The association of cirrhosis of the liver with degeneration of the nucleus lentiformis in this disease is so constant as to leave no doubt that there is an important relationship between them. Concerning this relationship two hypotheses present themselves: first, that the same substance which produces the liver changes also affects the lenticular nucleus; and second, that there is elaborated in the diseased liver some toxic body which has a peculiar affinity for the tissues of the corpus striatum. In our own case there was a marked history of alcoholism, and the liver definitely showed an early stage of Laennec's cirrhosis. If it be granted that the lesions of the lenticular nuclei as here described are an early stage of the process described by Wilson, it would appear that the disease may be associated with other types of cirrhosis having a more definite etiology. This would seem to indicate that our second hypothesis, already suggested by Wilson, is correct. If this be true one would expect to find these lesions more frequently than has been heretofore reported.

I wish to thank Dr. Oskar Klotz for his aid in preparing this paper.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

STRANGULATED EPIGASTRIC HERNIA IN A CENTENARIAN; OPERATION; RECOVERY.

BY FORBES FRASER, F.R.C.S. ENG.,
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A SHORT note of the following case may be of interest on account of the extreme age of the patient concerned. She is an unmarried lady, whose birthday was on Jan. 26th, 1812, so that her age at the time of operation was 101 years and 3 months. During the whole of her life she has had excellent health and has seldom employed a medical man. For some years past her relatives had noticed a lump in the upper abdomen, which occasionally increased in size and caused pain, but which they could always easily reduce by pressure. On the evening of May 8th last the lump became painful and could not be reduced, and in the night the patient vomited. Her medical attendant, Mr. T. Pagan Lowe, saw her on the next morning, and finding the hernia strangulated asked me to see the case. When I saw her 12 hours had elapsed since the onset of symptoms, and there was present above the umbilicus in the middle line a tense globular swelling as big as one's fist, acutely tender and irreducible. The patient's general condition was good, and though her arteries were markedly atheromatous her extreme age did not appear to offer any insuperable obstacle to successful operation.

Scopolamine (gr. 1/100) and morphine (gr. 1/6) were injected hypodermically, and an hour afterwards the patient had fallen into a sound sleep. Barker's solution of β-eucaine and adrenalin was then freely infiltrated into the subcutaneous tissue in the line of incision, and also deeply round the neck of the hernial sac. No other anæsthetic was given or required. With the assistance of Mr. A. de V. Blathwayt I then operated on the hernia, exposing the sac by a transverse elliptical incision. The sac protruded through a single circular opening in the rectus sheath, the lower border of the aperture being one inch above the umbilicus; it contained a strangulated knuckle of transverse colon and some adherent omentum. The aperture in the rectus sheath was enlarged, the bowel returned, the omentum and sac ligatured and removed, and the sheath transversely overlapped by Mayo's method. The operation was well borne, and the patient slept soundly for several hours afterwards. On waking she had entirely forgotten her illness, and refused to believe that an operation had been performed. She strongly objected to the bandage, and gave much trouble to her nurses by insisting on tearing off the dressings and pulling at the stitches with her fingers. Owing probably to repeated applications of tincture of iodine she fortunately failed to infect her wound, which, in spite of the maltreatment to which it was subjected, healed soundly by first intention.

For a fortnight after the operation the patient's mental condition gave us much anxiety. Notwithstanding the scopolamine, morphine, and the local anæsthetic the shock of the operation following on that of the strangulation had produced its effect on her debilitated nerve cells, and she became restless, excited, sometimes subject to delusions, and inclined to refuse her food. Perhaps the more perfect anæsthetisation of the parietal peritoneum, recently so ably advocated by Crile, might have avoided this unpleasant result. Thanks, however, to the unremitting care of her two nurses the patient gradually recovered her mental balance, and at the present time (August) is to all intents and purposes as well and active as she was before her illness, with the added advantage of having had her hernia radically cured.

Bath.

NOTES ON A CASE OF HYPERTROPHY OF THE BLADDER IN A CHILD.

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AND
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THE patient, a Hindu girl aged 7, was admitted to the General Hospital, Madras, in March, 1913, for a swelling in the lower part of the abdomen, which the parents had noticed for ten months and which was increasing in size. The child passed a small quantity of urine after considerable straining. Catheterisation proved the tumour, which extended above the level of the umbilicus, to be a large distended bladder containing a quantity of residual urine. After three days in the wards the bladder again became distended, and the nurse reported that the patient only passed small quantities of urine after straining, but complained of no pain. The urine, which was of low specific gravity, contained no pus. The child having been anæsthetised, the bladder was sounded and the following condition found. The urethra opened on the anterior wall of the vagina just internal to the hymen. The lower part of the urethra was normal, but there appeared to be some soft obstruction at its upper part and at the internal meatus. It being impossible to pass a cystoscope a suprapubic opening was made into the bladder and its interior explored. The vesical muscles were enormously hypertrophied, but the mucous membrane was healthy and showed no inflammation. At the meatus the mucous membrane appeared to be arranged in folds, and on palpation with the finger these folds seemed to form a valve over a catheter as it was withdrawn. A catheter was left in the bladder, and the patient returned to the ward. The catheter was removed on the fifth day, after which date urine was passed fairly freely by the urethra. Ten days after the operation the child, whose condition had given rise to no anxiety, had a sudden syncopal attack and died.

It is unfortunate that no complete post-mortem examination was possible, but the bladder, uterus, and vagina were sent to the pathologist for examination.

The pathological report was as follows: Hypertrophy of the bladder due to obstruction in the urethra. The muscular wall is immensely increased in thickness. There is an

operation wound on its anterior aspect. The mucous membrane is slightly hæmorrhagic and inflamed. The submucous coat is much thickened. The trigone is not smooth, but the membrane covering it is thrown into very prominent folds, which appear to obstruct the urethral orifice. Microscopical examination: Submucosa in the neighbourhood of the urethral opening is enormously thickened. There is an excess of cell growth just under the epithelium. There is great muscular hypertrophy.

The only reference we have been able to find to this curious condition is by Casper ("Genito-Urinary Diseases"). Under the heading "Valves," at the neck of the bladder two kinds of projection are mentioned, one due to muscular overgrowth and the other to hypertrophy of the mucous membrane. In the case reported no history could be obtained throwing any light on the pathology of the condition.

Reviews and Notices of Books.

Anaphylaxis. By CHARLES RICHET, Professor in the Faculty of Medicine, Paris. Authorised translation by J. MURRAY BLIGH, M.D., Medical Registrar, Liverpool Royal Infirmary. With a Preface by T. R. BRADSHAW, M.D., F.R.C.P. London: Constable and Co. Liverpool: The University Press. 1913. Pp. 266. Price 3*s.* 6*d.* net.

THE importance of the phenomena of anaphylaxis is gradually asserting itself in the field of pathology, and it is fitting that a book should be devoted to the subject, in which the many observations hitherto made can be collected and presented in a convenient form. No more suitable author of such a treatise could be found than Professor Richet, to whom both the name and much of the earlier work on the subject are due. Coined by Richet, the word anaphylaxis is meant to signify the opposite of protection (*ana*, privative = Latin re-, retro-, implying recession; we do not feel sure that the usage is correct), in that the subject of it develops not immunity but increased susceptibility to a poison. In this book we find, after a definition of anaphylaxis and a brief historical retrospect, an account of the incubation period, duration, and symptoms of the condition, and a discussion of the nature of the substances which give rise to this peculiar condition and of the mode of its causation, with the relation of anaphylaxis to the precipitation reaction and to deviation of complement. Anti-anaphylaxis and chronic and localised anaphylaxis are dealt with, and the importance of the condition in medicine as the probable explanation of many affections which at present are but little understood is pointed out. A bibliography of publications on anaphylaxis during the years 1910–12 is appended.

As giving practically the only existing connected account of this interesting condition, we welcome the appearance of Richet's book. It contains matter of the greatest importance to all medical men. Written by a leading authority on the subject with which it deals, it has, we think, the defects of its qualities. Probably owing to his own abundant knowledge Professor Richet seems to assume an equal, or at any rate a considerable, knowledge in the reader. At least, it is in this way that we are prepared to explain a certain degree of obscurity that seems to prevail in places, the argument being less clear owing to a tendency to leave the reader to supply connecting links. Such want of lucidity is rare in French books, but we must assume that the translator has presented the arguments as he found them. The actual version into English has been only moderately well done. For example, the sentence, "On the contrary, duck egg is practically harmless to guinea-pigs previously injected with hen egg, nor is the converse true (?)," is rather puzzling. And we do not in this country usually speak of "duck egg" or "hen egg." The statement in a note that the word "antisensibilisinogen" is "too euphonical" for retention is presumably ironical; perhaps the term might be retained as a useful test for sobriety instead of "British Constitution." But the greatest defect of all is the absence of an index, which seriously detracts from the value of the volume.

A Dictionary of Applied Chemistry. By Sir EDWARD THORPE, C.B., LL.D., F.R.S., assisted by eminent contributors. Revised and enlarged edition, in five volumes. Vol. IV., with illustrations. London: Longmans, Green, and Co. 1913. Pp. 727. Price 45*s.* net.

EACH succeeding volume increases our admiration for the thoroughness which is shown in the compilation of this valuable dictionary. Sir Edward Thorpe's great and varied experience clearly enabled him to choose the best materials for the work, the *personnel* of the present volume evidencing again a selection of writers who are not only admitted authorities on their subject, but clear exponents also. We rejoice to think that there is in the English language a dictionary of applied chemistry which easily leads as the highest source of reference in the world on the vast amount of subject matter with which it deals. As discovering chemists the Englishman still comes first, though unfortunately the palm must be given to other nations, and particularly to the Germans, for applying principles to practice. The references in the volume before us show how freely foreign literature has been drawn upon in connexion with chemical industries abroad, but it must be remembered that in many instances the processes are such as can only be favourably conducted in places where natural facilities exist either in regard to the supply of raw material or of natural power.

The subject matter of Vol. IV. of this great dictionary is comprised within the headings "Oilstone" to "Sodanitre," and the issue of this volume suggests, of course, that the final number will compass the remaining subjects included in So to Z. We thus obtain a view of the ground which the complete dictionary covers. There are many articles of medical interest in this issue. We may commend, for example, those on the Oxydases, by Dr. E. F. Armstrong; on Radio-activity, by Professor Bragg and Dr. W. Makower; on Paraguay Tea, Rum, and Sakè, by James Connah, of the Government Laboratory; on Pepper and Pimento, by Cecil H. Cribb; on Vegetable Products, including Pawpaw, Potato, Pumpkin, Rape, Rhubarb, and Sainfoin, by Herbert Ingle; on Smoke and Smoke Prevention, by Professor Vivian B. Lewis; on, amongst other oils, the Edible Oils, by Dr. Julius Lewkowitsch; on Ice-making Machinery, by T. B. Lightfoot; on Proteins, by Dr. S. B. Schryver; on Oleoresins, Opium, Pepsin, Senna, &c., by Dr. Alfred Senier; on Ptomaines, by Miss Beatrice Thomas; and on Purins, amongst other subjects, by Dr. Martha A. Whiteley. Coming to close examination of some of the articles, we are surprised to find that in that on Smoke and Smoke Prevention no mention is made of the admirable work being done by the Coal Smoke Abatement Society, while the suggestion which bore practical fruit in our columns last year on the question of measuring the sootfall of London and other places obtains no reference. One of the most interesting articles is that written by Dr. Makower on Radio-activity. This contribution should be very helpful to those anxious to know the tendencies of modern developments in this fascinating branch of scientific study. The section on Proteins brings the subject well to date, and its perusal will well repay those who are interested in these bodies, which play such an important rôle in nutrition. The position of petroleum is well indicated by the leading authority on the subject, Sir Boverton Redwood. An interesting article precedes this on Synthetic Perfumes. Lastly, the

articles on Ozone and Oxygen present a most illuminating account of the recent methods for the industrial preparation of these substances and of their increasing application in commercial practice.

The library of the chemist cannot be complete without these volumes, which cover all the important applications of chemistry in the arts and industries, and so simply, as a rule, is the subject stated that all those interested in the present position of this practical and progressive department of human knowledge, whether expert chemists or not, may be assured that the possession of this dictionary would be an unquestionable advantage to them.

Experimental Studies of Mental Defectives: A Critique of the Binet-Simon Tests and a Contribution to the Psychology of Epilepsy. By J. E. WALLACE WALLIN, Ph.D., Director of the Psychological Clinic, University of Pittsburgh. Baltimore: Warwick and York Publishing Company. 1912. Pp. 155. Price $1.25.

THIS volume, which is one of a series of "Educational Psychology Monographs" published under the editorship of Professor Guy Montrose Whipple, records the results of an examination by the Binet-Simon method of some 300 epileptics in the New Jersey State Colony at Skillman. Though designed in part to elucidate the psychology of the epileptic, the main aim of Dr. Wallin's inquiry was to test the value and utility of the Binet-Simon measuring scale of intelligence. It may, however, be open to question whether the author was entirely well advised in selecting this particular ground for his research. Every investigation, no doubt, must inevitably be in some measure a test of the instruments which it employs, but when, as in the present instance, the instrument is a novel one, and its fashioning and application are still in the experimental stage, it would seem preferable in essaying its value to try it on subject matters where the results which it yields can be controlled by data obtained through other and more familiar methods.

Dr. Wallin's book confirms our doubts on this point. He has found, for instance, that the curve of distribution of his cases as classified by the Binet-Simon tests shows marked irregularities, contrasting in this respect with the results of various American observers who have applied the same method to normal school children and to feeble-minded subjects. This discrepancy, Dr. Wallin very justly observes, may be due, not to defects in the tests or in the way of applying them, but to other causes, and notably to peculiarities in the mentality of the epileptic; and on a minute analysis of his figures he is, in fact, led to the conclusion that this latter influence has contributed materially to the irregular results. Such a conclusion tends surely to show that data of this kind, admitting of ambiguous explanation, are not the best suited for making trial of a scale of tests, and that further research with normal subjects would be more likely to serve this purpose. It is a purpose which Dr. Wallin has much at heart, for he is a convinced believer in the value of the Binet-Simon method as the best instrument available for classifying grades of intellectual defect, and his very enthusiasm for the merits of the system renders him the more eager to correct its imperfections. It is impossible not to feel, however, that the corrections which he proposes would carry more weight had they been based on the examination of less exceptional material. As it is, they are in disagreement on several important points with the suggestions of other critics who have experimented with normal children, as, for instance, Goddard in America and Robertag in Germany. It has further to be remarked that Dr. Wallin, in his version of the tests and in his procedure in applying them, has departed very widely from the lines laid down by Binet and Simon, and this fact has, no doubt, contributed to vitiate his results. Now that this particular method of measuring intelligence is coming into wide use, it is increasingly necessary to insist on the extreme importance of a rigid uniformity in the technique of examination; such uniformity is of the essence of the system, and modifications in the method, even if sound in themselves, can only be sources of error and confusion if they are taken into use by individual workers before they have gained acceptance as part of the universal convention. For this reason the chapter of practical instructions in the use of the tests which Dr. Wallin has incorporated in his essay cannot be recommended to English readers. Apart from the defects to which we have referred, it has the disadvantage of being based on the early and tentative scheme of Binet, which has been superseded by the revised edition of the tests issued in 1911, and is now used by most investigators who employ this method. An authoritative English version of the revised scale is much to be desired.

Handbuch der Vergleichenden Physiologie. Herausgegeben von HANS WINTERSTEIN. Lieferung 53. Band III. *Physiologie des Energiewechsels.* Erste Hälfte. Jena: Gustav Fischer. 1913. Pp. 969–1132. Price 5 marks.

Professor Biedermann continues his exposition of the physiology of the supporting and skeletal tissues. He deals successively with the chemistry of connective tissue, the origin of the fibrils of connective tissue, and elastic tissue in its physical, morphological, structural, and chemical aspects. Cartilage is next discussed in its several varieties as it is found throughout the animal kingdom. Specially interesting is the account of the physical value of the arrangements of the fibres in this tissue, which leads the author to a fuller description of what has been called the architecture of its derivative bone. The micro-chemistry and optical characters of the ground substance of cartilage are carefully described and illustrated both by drawings in black and white and in colour. The account of the life and growth of the ground substance is particularly interesting, and embodies the latest views of observers on this subject. Rather less than half of this "Lieferung" is taken up by an elaborate account of bone. To many readers the account of the macroscopic functional structure of the spongiosa will specially appeal. The illustrations are both numerous and well selected. The whole is a sound compendium of the facts and theories regarding connective tissues.

Geschichte der Ohrenheilkunde. Von Dr. ADAM POLITZER, Em. o.ö. Professor der Ohrenheilkunde an der Wiener Universität. Zwei Bände. II. Band. Von 1850–1911. Unter Mitwirkung bewährter Fachkräfte. Stuttgart: Ferdinand Enke; Glasgow: F. Bauermeister. 1913. Pp. 484. Price 24 marks, or 24*s.*

AT the age of 78, Hofrat Professor Adam Politzer, *doyen* amongst aurists, has given to the medical world the second and final volume of his "History of Otology." It is in every sense a monumental work, tracing the history of otology from the earliest times up to and including the year 1911. Not content with the history of each individual, this wonderful work contains also a compilation of the works and writings of those people who are mentioned. Professor Politzer has also written, especially in this the second volume, a series of what might be termed essays on the histories of the anatomy, the physiology, and of the pathology of the organs of hearing, tracing each separate subject from its earliest mention in medical literature to its present state. No man living has done so much to advance the study and status of otology as Professor Politzer. He stands out as a giant. He has been the actual

teacher of a large proportion of the men who are arriving, or already have arrived, at a high place amongst otologists, and it must be very pleasing to him, when compiling the latter part of this work on the history of otology, to have been able to add so many names of men who owe their early steps to his fatherly care and guidance. It is much to be hoped that some enthusiastic aurist will translate this book into English, but whether this is done or not Professor Politzer's "History of Otology" will always remain the authority on its subject.

A Manual of Elementary Zoology. By L. A. BORRADAILE, M.A. London: Henry Frowde and Hodder and Stoughton. 1912. Pp. 470. Price 10*s.* 6*d.* net.

OF the making of zoological text-books there seems to be no end. It is only the other day that the available text-books were none but those of Huxley, and now there is an indefinite choice, not merely of works by English writers like the present, but of translations from foreign zoologists. One statement may be made at once about this and the newer handbooks—that the authors have had the advantage of studying the productions of their many forerunners, and are thus able to avoid the mistakes into which the pioneers may have fallen. Furthermore, the usual types of animal life dealt with in these books are so thoroughly known that there is practically no room for absolute error in the accounts given of them. In Mr. Borradaile's manual we can discover nothing that should be eliminated on the score of incorrectness. This book is, however, more than a mere account of the structure of the rabbit, the pigeon, and those types now so familiar in the schedules of universities. The author has indeed dealt with a well-selected series of these types, but the information given by him to the student embraces also the general problems of zoology. These large questions, though necessarily treated with brevity, are very plainly argued and the generally accepted conclusions set forth in a highly intelligible fashion, entirely without dogmatism. Alternatives are in many cases suggested, but with great discretion as being at present beyond the range of scientific observation and induction. The manual appears to us to be as good as any that we know to place in the hands of the commencing student, and very much better than the majority.

A Text-book of Surgery for Dental Students. By G. PERCIVAL MILLS and HUMPHREY HUMPHREYS. With 57 Illustrations. London: Edward Arnold. 1913. Pp. 340. Price 12*s.* 6*d.* net.

THE curriculum as set out for the various licences in dental surgery requires that the student should attend a course of lectures in general surgery. In the early days of dental examinations it was always difficult to gauge what field that instruction should cover. In order to meet that difficulty the Royal College of Surgeons of England a few years since published a syllabus which quite recently has been revised. Even with this assistance the dental student had to contend with the difficulty of obtaining his knowledge from text-books designed for the student of general medicine. The publication of the text-book under review has removed much of this difficulty, for in this volume the dental student will find the general principles of surgery set forth in a clear and concise manner. An idea of the way in which the authors have carried out their task can be gained by taking two examples. The first is the opening chapter, which deals with surgical bacteriology. There is a short historical introduction; then follows a general account of bacteria, the common varieties of bacteria and the diseases they produce, and the processes of infection and immunity. The second example is the section on the affections of the face and lips. The student is here first introduced to the development of the head region and is shown how malformations arise. Following this the various conditions are briefly described and the principles underlying treatment clearly indicated. In a similar manner regional surgery is covered, and we feel sure that the book will prove of the greatest value to both the student and the practitioner of dental surgery.

The Plant Alkaloids. By THOMAS ANDERSON HENRY, D.Sc. Lond., F.C.S., Superintendent of Laboratories, Scientific and Technical Department, Imperial Institute. London: J. and A. Churchill. 1913. Pp. 466. Price 18*s.* net.

Dr. Henry recognises the difficulty of attempting a classification of the alkaloids, especially in view of the activity which is being shown by investigators on questions bearing upon the structure of these interesting and important organic bases. For the present, however, the arrangement he has adopted of grouping them according to the nature of the nucleus is in some measure convenient. He thus arrives at eight groups with a known definite nucleus, while the ninth group includes the alkaloids of unknown constitution. The nucleus groups are arranged in the following order: pyrrol, pyridin, the diheterocyclic group with a common nitrogen atom, quinoline, iso-quinoline, glyoxaline, purin, and the cyclic or acyclic derivatives of the fatty amines. On the other hand, as the author points out, it is inconvenient to arrange the alkaloids for discussion according to their chemical constitution, since this plan separates alkaloids which occur in the same plant and which for practical purposes it is desirable should be dealt with together. While, therefore, he has adopted the classification of the alkaloids into the groups just given, the scheme is modified by including a sub-classification according to source, all the alkaloids from the same plant being dealt with together. It is noteworthy that the chapter on the alkaloids of unknown constitution occupies 112 pages, or a fourth part of the volume, the iso-quinoline group coming next with 101 pages. These two groups, after all, contain by far the most important alkaloids from a medical point of view. In the iso-quinoline group, for example, are the cinchona alkaloids, the opium alkaloids, strychnine, and others, while amongst the bases of unknown constitution must still be reckoned aconite, ergot, colchicine, emetine, veratrine, and jervine.

One very valuable feature of the book is the references to the history of the alkaloids, giving the date of their isolation and recognition as definite entities. These references bring home the extraordinarily accurate work done by Pelletier and others early in the last century, a period when great activity was shown in regard to the separation of alkaloids from the plant substances. Nowadays emetine, which has risen into great pharmacological importance on account of its value in the treatment of dysentery, is inclined to be looked upon as a newly discovered active constituent of ipecacuanha, but, as Dr. Henry points out, it was first obtained by Pelletier in 1816. It seems incredible that the pharmacology of this and many other active constituents of plants was left, as it would seem, without serious study for nearly a hundred years. The early years of the nineteenth century were, in fact, marked, it is interesting to note, by announcements of the isolation of definite basic principles in many instances. In 1804 the isolation of morphine was described. About the same time quinine was recognised, although nearly 20 years previously an impure product was obtained. Strychnine was discovered by Pelletier and Caventon in 1817, atropine in 1833, and aconitine about the same time, although aconitum napellus was employed in medicine in the thirteenth century. Conine from hemlock was first isolated in 1827,

colchicine from the autumn crocus in 1820, ergotine and ecboline from ergot in 1865. These are statements taken from the book illustrating the interest of the historic side of the story of the alkaloids. The chemistry of the alkaloids is also ably discussed, and where justifiable the probability of a definite constitution is considered. There is a belief in many quarters that as our knowledge of the constitution of alkaloids advances the secret of their synthesis will be laid bare, and some day we may be made independent of the present day natural sources. Dr. Henry probably never intended to develop the practical side of the subject, in the direction, that is to say, of analytical procedure for the detection of alkaloids in forensic practice, for the tests given in some cases are inadequate. Even in the chapter on morphia well-known tests like the reduction of iodic acid or of molybdic acid are not mentioned. The methods given, however, by which the alkaloids are separated both as regards practical recovery and analytical work are clearly modern.

The book deals with the alkaloids as a separate and distinct class of bodies, and includes well-written sections on their occurrence, chemistry, physiological action, and the methods by which they may be best estimated according to up-to-date experiences. It will be widely appreciated as a very convenient and trustworthy source of reference in regard to a series of bodies which are of the first importance in medicine and chemistry.

Medizinische Terminologie. Von Dr. WALTER GUTTMANN, Oberstabsarzt Z.D. an der Kaiser Wilhelms-Akademie für das Militärärztliche Bildungswesen in Berlin. Sixth and seventh, revised and enlarged, edition. Berlin and Vienna: Urban und Schwarzenberg. 1913. Pp. 1427. Price 19 marks.

Lang's German-English Dictionary of Terms Used in Medicine and the Allied Sciences. Second edition. Edited and revised by MILTON K. MEYERS, M.D., Neurologist to the Jewish Hospital Dispensary and to St. Agnes Hospital Dispensary, Philadelphia. London: J. and A. Churchill. 1913. Pp. 564. Price 18*s.* net.

Dr. Guttmann's book is well known amongst German-speaking medical men, and one enthusiastic and important German review has said that "the book knows all and gives to every question a good answer." There is no doubt that this is a very useful book, although we have noticed one or two errors in it—e.g., "Arrow-rot," is said to be English. The words "rot" and "root" are again confused, for under "Veld sore" the synonyms are given as "Natal sore and Barcoo rot," but under B, "Barcoo-root" is stated to be "Bezeichnung des Veldsore in Nordqueensland." On page 340 under "Effect" Fluor-calcium is printed Fluoralcium. These slips will occur in the best of dictionaries, and this book is indeed a valuable work of reference.

Dr. Meyers, in his German-English Dictionary, has acknowledged his indebtedness to Guttmann's book, amongst other dictionaries. He has added 4400 definitions to the 45,000 published in the first edition of the dictionary, which was commenced by the late Mr. Hugo Lang and completed by the late Dr. Bertram Abrahams. We have found the first edition most useful, and welcome the appearance of a revised and enlarged edition. The compilers of both the dictionaries under notice deserve encouragement and praise for their arduous tasks.

With reference to the note in Dr. Blondel's interesting address on "Medical Terminology" published in THE LANCET of August 9th, 1913, Dr. Blondel states (in French): "There is in Germany a *Patella Krankheit*, which has no reference to the knee-pan (*Patella*), but which is, indeed, a tuberculous pyloric stenosis described by the Italian Doctor Patella (of Siena)." We notice that Dr. Meyer gives this in his German-English Dictionary as "*Patella 'sche Krankheit*"—pyloric stenosis in the tuberculous. Dr. Guttmann gives the following reference: "PATELLA (VINCENZO, Prof. in Siena)—P. Krankheit (1901): Pylorusstenose bei Tuberkulösen infolge fibröser Entzündung." It will be observed that he puts the name in capital letters to make a distinction from ordinary terms, and Dr. Meyers, doubtless with the same intention, has given the noun the possessive case by adding the *'sche*. Things seem to be changing since the day when Dr. Shirley Palmer compiled his "Pentaglot" medical dictionary for English readers by putting the French term first, "because the French literature was at that time more studied, and he hoped also thereby to obtain an international audience." It is easier now to obtain a German-English medical dictionary than a concise and complete French-English one of moderate price.

A System of Veterinary Medicine by Various Writers. Edited by E. WALLIS HOARE, F.R.C.V.S., Lecturer in Veterinary Hygiene, University College, Cork. In two volumes. Vol. I.: Microbial Diseases. Pp. 1327. London: Baillière, Tindall, and Cox. 1913. Price 21*s.* per volume.

THE knowledge of the causes and treatment of the diseases of animals has increased enormously during recent years, and no better evidence can be brought forward to emphasise this fact than the publication of a volume of some 1327 pages on microbial diseases alone, to be followed by a second volume upon the remaining diseases. To write authoritatively upon every disease to which the animal race is subject would be impossible, and Mr. Hoare has done wisely to act as editor and obtain the help of collaborators, amongst whom we are pleased to note several holding degrees in pure science and human medicine as well as the necessary veterinary diploma. A knowledge of animal diseases is of service to medical practitioners, especially to those engaged in public health work, and in "A System of Veterinary Medicine" the comparative aspect is fully dealt with, especially in regard to such diseases as glanders, tuberculosis, anthrax, diphtheria, &c., whilst special chapters are devoted to the bacterial affections of birds and even fishes. The list is very lengthy, the work is up to date, and both editor and publisher have done their respective parts excellently. It is a book which every official in the public medical service should have on his bookshelf as a work of reference.

LIBRARY TABLE.

Malaria: Cause and Control. By WILLIAM B. HERMS, M.A., Assistant Professor of Applied Parasitology, University of California. Illustrated. New York: Macmillan and Co. 1913. Price 6*s.* 6*d.* net.—The author is officer in charge of malarial investigations under the State Board of Health of California, and presents the results of nearly four years' practical study of malaria throughout all parts of that State, following on previous experience in Southern Ohio. He quotes Howard as estimating the annual deaths from this cause throughout the United States at nearly 12,000, and from the statistics of the Californian State Board of Health calculates that the annual loss to that State from malaria comes to over $2,800,000, due to deaths, loss of earning power (of 6000 citizens reduced by 25 per cent.), depreciation of land values, &c. In the case of one town he reckons the annual loss (items being given in detail) at $75,000. Estimating that malaria cases can be reduced at least 50 per cent. in one year by an efficient campaign, followed by a reduction of 80 per cent. in the second and 95 per cent. in the third year, he shows what could be saved by an annual expenditure of about $2000. Upon a clearly written and

popular account of the malarial parasite, of the anopheline mosquitoes, and of anti-mosquito methods, there follows a description of an organised malaria crusade at Penryn and summaries of proceedings at four other places in widely separated parts of the State and under differing topographical conditions. The special features of the work are the number and excellence of the illustrations and the minute instructions as to points of detail. These give it great practical value for the professional sanitarian, while the clearness of exposition makes it easily intelligible to the ordinary public who dwell in malarial localities.

Collected Papers. Reprinted from the *Journal of the Royal Army Medical Corps.* Vol. I. December, 1912. Pp. 150. London: John Bale, Sons, and Danielsson, Limited.—Some two dozen contributions to our valuable contemporary during the last two years have been gathered into one volume, presumably for convenience of reference, and perhaps partly to preserve them from the limbo of obscurity that awaits too much periodical literature, medical as well as other. The subjects dealt with cover a wide area, but are mostly in the domain of experimental pathology, and without exception the papers are original contributions to professional knowledge of distinct value. We would especially instance the initial paper by Colonel W. H. Horrocks on the Viability and Possible Variation of Bacillus Typhosus, which opens up a subject of far-reaching importance, on which we should like to have further information. The experiments were evidently conducted with every precaution, and the research deserves most careful consideration. Several papers deal with microscopic research on the parasites of tropical disease, such as kala-azar, blackwater fever, and trypanosomiasis, by Sir William B. Leishman and others; and in a series of contributions on the use of salvarsan in syphilis and the treatment of gonorrhœa the results of a great deal of practical experience are brought together in accessible form. The original observations on metabolism in connexion with an experimental march, carried out under exactly measured conditions by Colonel Melville, Colonel Beveridge, and Captain Walker, are also of permanent value, as being in the nature of a scientific experiment from which practical conclusions can be drawn as to the requirements of armies in regard to rations, &c., on service.

JOURNALS AND MAGAZINES.

Journal of Anatomy and Physiology. Conducted by Sir WILLIAM TURNER, K.C.B., Professor ALEX. MACALISTER, Professor ARTHUR THOMSON, Professor ARTHUR KEITH, and Professor ARTHUR ROBINSON. Vol. XLVII. Part 4. July, 1913. London: Charles Griffin and Company. Annual subscription 21*s.* post free.—To this number Dr. Albert A. Gray contributes an important paper on the Comparative Anatomy of the Middle Ear. Dr. Gray finds the middle ear far more variable than the labyrinth upon which he has previously made exhaustive investigations. Some beautiful preparations illustrate this paper, and many of the points touched on—such, for instance, as the evolution of the mastoid cells—are of the greatest interest to the aural surgeon.—Miss Williamina Abel has made a fresh study of the Musculature of the Human Œsophagus. The arrangement that she has found to be normal is illustrated by four figures; and, as might be expected, although this arrangement is not that described in most text-books, it is almost exactly that which the late Professor Birmingham gave as the normal human condition.—A careful study of cerebral fissuration is that contributed by Mr. Geoffrey Jefferson under the title of the Morphology of the Sulcus Interparietalis. Mr. Jefferson concludes from this study that the sulcus is a complex one, made up of several primarily independent sulci, these component sulic being limiting sulci which separate highly important brain areas. The proposal is therefore rightly made that these component sulci should be regarded, not as rami of one primary sulcus, but as independent entities which have coalesced the majority of human brains.—To the study of anomalies and abnormal anatomy Professor David Waterston adds a new instance of Duplication of the Post-renal Segment of the Vena Cava Inferior.—A paper by Mr. Lewis Graham describes the condition of an Agnathic Fœtus, and illustrates the anomalies found on dissection in eight figures.—Professor J. A. Pires de Lima, of Oporto, discusses the Nature of a Bone found in Musculus Vastus Externus, and reviews the whole question of the character of such abnormal bone formations.—Mr. Douglas E. Derry gives a full description of a case of Hydrocephalus in an Egyptian of the Roman Period. This case presents many features not typical of a condition of hydrocephalus, and it was apparently complicated by a weakness of the limbs of the left side of the body. The effects of these pathological conditions as displayed in the skeleton are fully described and illustrated.—A contribution towards the much-studied Auriculo-ventricular Connexions is made by Dr. Alexander Morison, who describes the auriculo-ventricular node in a malformed heart. Several important questions as to the development and distribution of the nodal tissue arise out of this study of the abnormal condition, and these questions are discussed by the author.—Mr. Douglas G. Reid continues his Studies on the Intestine and Peritoneum in the Human Fœtus, and adds some notes on the retrocolic fossa, splenic process of peritoneum, and bloodless fold of Treves.—An anatomical note upon an Abnormal Lumbar Vertebra, by Professor D. P. Fitzgerald, deals with the significance of the mammillary processes.—The index of Vol. XLVII. is included in this issue.

The Journal of Physiology. Edited by J. N. LANGLEY, Sc.D., F.R.S. Vol. XLVI. No. 6. August, 1913. Cambridge University Press. Pp. 413–508. Price 6*s.*—The Part Played by the Lungs in the Oxidative Processes of the Body, by C. Lovatt Evans and E. H. Starling. This paper completely disproves the view of Bohr and Henriques that the seat of the oxidations is not confined to the tissues, but that a variable amount of the combustion processes is carried out in the lungs. By means of the now well-known heart preparation and careful analysis of the gases the authors show not only in the normal tissues supplied with the normal amount of oxygen, but even in conditions of extreme oxygen lack, such oxidations as are carried out are completed in the tissues. The lungs do not exercise any general or specific activity in completing oxidations partially carried out through other tissues.—The Absolute Mechanical Efficiency of the Contraction of an Isolated Muscle, by A. V. Hill. This is a highly technical paper. The author strongly criticises Fick's results in the mechanical efficiency of muscular contraction.—The Effect of Alcohol on the Excitation, Conduction, and Recovery Processes in Nerve, by Keith Lucas. This also is a very elaborate and highly technical contribution, which has a special interest more especially for physiologists and pharmacologists.—An Apparatus for Perfusing the Mammalian Heart, by J. A. Gunn. The author compares his apparatus with that of Brodie and Cullis, and claims for it that there is no greater difficulty in perfusing the mammalian than the batrachian heart.

HOSPITAL SATURDAY AT NEWTON ABBOT (DEVON).—The Hospital Saturday collections at Newton Abbot resulted in the sum of £220 being handed over to the local hospital.

SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

THE SECTIONS.

SECTION XVIII.—HYGIENE AND PREVENTIVE MEDICINE.

FRIDAY, AUGUST 8TH.

THE morning session of this section was occupied in a joint discussion with the Sections of Obstetrics and Children's Diseases on

Infantile Mortality in the First Four Weeks of Life.

No less than 26 speakers took part in this discussion, and the subject was treated in all its aspects, from the point of view of the obstetrician and the specialist in pædiatrics as well as in its relation to public health. There was a general consensus of opinion that one of the chief causes of infantile mortality was immaturity, and that the proper way to attack the problem was to deal with the infant in the pre-natal stage; in other words, to look after the pregnant mother. Several speakers advocated notification of all pregnant women, which, however sound in theory, is probably a counsel of perfection. Others laid stress on education of the public, especially on education of prospective mothers. Wet nursing was strongly advocated by Dr. T. W. EDEN (London) and Dr. HERBERT SPENCER (London), and a word of warning was uttered by several obstetricians as to the evils of "meddlesome midwifery," while Professor J. B. DE LEE (Chicago) went so far as to say that in his opinion under modern conditions parturition could no longer be considered a physiological but rather a pathological function, a dictum which, however, was strongly dissented from by his fellow countryman, Dr. WOODS HUTCHINSON (New York), as well as by other speakers.

Afternoon Session.

Dr. REGINALD DUDFIELD (London) read a paper on

The Registration of Stillbirths,

in which he drew attention to the fact that the reduction in infantile mortality that had taken place during the last decennium had been brought about by preventive measures affecting post-natal causes of death, but that ante-natal causes had been practically not influenced up to the present. He believed that the best hopes of success in that direction lay in the study of the causes affecting stillbirth, and advocated compulsory registration of such births as absolutely essential. He gave a tentative definition of the term "stillbirth," the essence of which was that a stillborn child was one whose heart had ceased to function, as demonstrated by the absence of pulsation in the cord at its attachment to the body of the child, and absence of heart sounds and impulses. Used at the instant of complete birth the test was one which a properly trained midwife should be able to apply, and it should not be beyond the skill of most lay assistants. As to the form of registration there was a difference of opinion, but he thought it should provide for the declaration of the causes of death in utero, and that, therefore, the form of registration should be that applying to deaths, and that a special register of stillbirths should be provided.

Professor ALFONSO MONTEFUSCO (Naples) read a paper on

The Incidence of Croup at Naples.

He said that croup, which he did not define, but by which he presumably meant laryngeal diphtheria, was more common than diphtheria, and that its contagion when it spread in a house or family nearly always produced cases of croup, and very rarely of diphtheria. In his experience the disease more frequently occurred in the country than in the town, was more common in males than in females, but had a greater mortality among females.

Dr. E. DEUTSCH (Budapest) read a lengthy paper entitled "*Sozialhygienische Ueberwachung der Abnormen Kinder*," which practically consisted of an advocacy of the principles of eugenics, based on carefully compiled statistics as to the effects on offspring of alcoholism, morphinism, syphilis, &c., in the parents.

The paper was discussed by Professor G. STICKER (Bonn) and Dr. MAJOR GREENWOOD (London).

Dr. ANGUS G. MACDONALD (Kingston, Jamaica) read a paper on

Tuberculosis in the Tropics,

the main note of which was that the chief causes of death in the tropics, far from being purely tropical diseases, were the time-honoured diseases of civilisation, and he also emphasised the fact that the "bad eminence" to which the tropics had been elevated as hotbeds of disease was in the main undeserved, as in most places disease and consequent early death could be avoided by the adoption of proper precautions. In the tropics, no less than at home, the chief incidence of preventable disease was on the poorer and more ignorant classes of the population. Coming more particularly to tuberculosis, he stated that the bovine form was comparatively rare in the tropics. Occupation played little part in this disease. Food infection could have little or no effect, as tuberculous meat was rare, and milk practically always boiled and consumed in relatively small amount. Climate apparently had no influence, as the mortality rate was 0·5 per 1000 in the damp relaxing climate of Grenada, and 3·4 per 1000 in dry and bracing Kingston. Evidence from everywhere pointed to tuberculosis being a disease of domesticity, caused by the wretched hovels of the people, the overcrowding of rooms at night, closing of doors and windows, and absence of ventilation. The causes of the disease being thus essentially the same in the tropics as at home, it was obvious that the campaign against it should be carried on on similar lines. It should be much easier, however, to carry out open-air treatment in such a place as Jamaica, with a climate which for variety and at the same equality was perhaps unsurpassed in the world.

Dr. GEDEON BIRO (Budapest) read a paper in which he strongly advocated the teaching of children in open-air schools.

SATURDAY, AUGUST 9TH.

At the morning session the chair was taken by Dr. W. H. HAMER, medical officer, London County Council. The subject for discussion was

The Factors that Determine the Rise, Spread, and Degree of Severity of Epidemic Diseases.

Mr. MAJOR GREENWOOD, jun. (Lister Institute of Preventive Medicine, London), in opening, first dealt with the subject in its historical aspect, with special reference to the views of Sydenham, who distinguished between (1) secular or long-period modifications in the types of infectious diseases; (2) another set of factors producing short-period oscillations in the epidemicity of a given disease, leading to seasonal prevalence; and (3) an epidemic constitution in virtue of which certain types of epidemic or certain features of morbidity tended to prevail at a given time to the exclusion of other types or symptoms. The amplitude of the first kind of wave could be measured in centuries, that of the second in months, and the last in years. Mr. Greenwood next traced the history of scarlet fever during the last 100 years, which showed evidence of a wide prevalence and high fatality at the commencement of the nineteenth century, followed by a remission, which again was succeeded by a period of gravity in the years 1830–40, which he termed the "golden age" of scarlet fever. This culminated between 1862–65, followed by a remission; then a less-marked rise in 1868–71, followed by another smaller rise, and from the year 1877 onwards there had been a continuous downward trend, disturbed only by occasional small ripples. Various theories to account for the acknowledged lessened severity of scarlet fever were discussed under the following heads: 1. Improved treatment and prophylaxis, though it was pointed out that the remission of the disease had begun before the initiation of modern hygiene. 2. Natural selection, or the weeding out of susceptible persons during epidemic prevalence. 3. Variations in the *materies morbi*, which might have undergone a change in infective power. Mr. Greenwood concluded his paper by a detailed account of the various statistical methods adopted in reference to epidemics.

Professor G. STICKER (Bonn) followed with a long and closely reasoned paper in German, in which he argued that in order to discover the conditions of parasitic epidemics they must avoid all generalisation and study each malady by itself—historically, geographically, biographically, nosographically, and experimentally. They should study how

far animals and plants took part as victims or as carriers of the germs of the human disease; where the origin of the germ lay hidden; whether there were animal or vegetable or lifeless undercarriers; whether the disease was spread by hosts which were themselves healthy, or by lifeless material; and what other epidemic disorders were either occasionally or regularly connected with the parasitic epidemics, so as to aid their progress or increase their severity.

Dr. JOHN BROWNLEE (Glasgow) explained his statistical methods dealing with the laws regulating the course of epidemics. He believed that an epidemic was an organic phenomenon caused by the organism becoming suddenly infective, and thereafter losing its infectivity at a rate approximating to a geometrical progression, and that it was probable that the epidemic ended because of loss of infectivity on the part of the infected organism rather than because of a change in the susceptibility of individuals towards the organism. With regard to summer diarrhœa, the date of the epidemic was determined by three factors—by the date of the epidemic in the previous year, by the temperature in the month of June, and by the amount of rainfall in June, while the extent of the epidemic was determined chiefly by the temperature in July.

The CHAIRMAN said that he had been very much struck with a suggestion thrown out by Mr. Greenwood—namely, in some of the milder epidemics, was the organism associated with the disease really, so to speak, a lion, or was it only a jackal? He referred to two epidemics which he had studied in London in the last few years. The first was an outbreak of cerebro-spinal fever which had been raging on the continent. A few cases were introduced into London, but the epidemic did not spread. In the second instance the organism of plague was isolated in certain diseased rats, but the remarkable limitation of the disease to a few rats raised the question whether the organism was really the genuine plague bacillus or only a jackal. Similar remarks might apply to the question as to why cases of human glanders were so rare.

Dr. J. JAMIESON (Melbourne) referred to the remarkable diminution of the mortality from typhoid fever in Melbourne during the last 20 years or so owing to the adoption of proper schemes of drainage, the death-rate now standing at one-tenth of the figure reached in the period referred to.

Dr. E. W. GOODALL (medical superintendent of the Eastern Fever Hospital, Homerton) contrasted the great reduction in both the mortality and severity of scarlet fever during the last 20 years with the very slight decline in the mortality of typhoid fever or measles in the same period. He believed this to be due to the fact that severe cases of scarlet fever where the throat was chiefly attacked were due not so much to the specific organism of the disease, whatever it might be, but to streptococcal infection, and pointed out that the mortality had also markedly lessened in other diseases caused by streptococci, such as erysipelas, pyæmia, and puerperal fever.

Dr. J. C. G. LEDINGHAM (London) dealt with the subject from the bacteriological point of view, and it was also discussed by Professor K. SUDHOFF (Leipsic), Dr. W. A. BOND (medical officer of health of Holborn), and Dr. R. D. KEITH (Singapore).

Mr. GREENWOOD and Professor STICKER replied to remarks of various speakers.

TUESDAY, AUGUST 12TH.

President, Dr. ARTHUR NEWSHOLME (London).

A discussion took place on

The Causes, Prevention, and Treatment of Visual Defects in School Children.

Dr. LESLIE MACKENZIE (Edinburgh) occupied the chair, and the first paper was read by Dr. JAMES KERR (London), who stated that the prevalence in the population of a mass of low-grade myopia, by which he meant myopia of less than 3 dioptres, largely associated with excess of eye-work, called for prophylactic school treatment, in the diminution of all book work, and its practical elimination in children under 8 years of age. The learning of letter forms in the case of print ought to be almost entirely muscular, and with this object he recommended the construction of letter forms out of pliable wire. The elements of writing should be learnt as coarse muscular exercises with chalk and blackboard, the child standing with outstretched arms and making large free rapid strokes. Lighting was of the utmost importance, and required much improvement, and back lighting as the main source of illumination in class-rooms should be absolutely prohibited. A stringent rule to exclude myopes from literary careers should refuse scholarships to myopes of 4 D or more, and all candidates for the teaching profession should be rejected for myopia of 6 D or more.

Professor POSSEK (Graz) argued that it was the duty of the State to provide suitable means for preventing the contraction of visual defects. He emphasised the fact that eye work in itself could not cause myopia, but only eye-work under unsuitable or unhygienic conditions. An examination of the sight of all school children should be made once a year at least, while myopes should be repeatedly examined. He confirmed Levinsohn's observations that it was the bending of the head which produced in the eyes by the force of gravitation a traction on the hinder quadrant. Therefore everything leading to bending of the head should be prevented, as well as every difficulty which led to shortening of the work distance, such as bad lighting, small print, and unsuitable seats.

Dr. L. A. PARRY (Hove) thought that Dr. Kerr had hardly laid enough stress on the importance of lighting in class-rooms, especially of allowing the light to come from the left-hand side of the desks, which was essential. He advocated full correction of myopia, and considered that school medical officers should have had previous training in diseases of the eye, and that members of education committees should have some knowledge of the laws of hygiene; indeed, he would like to see some kind of examination made a test of fitness for office.

Dr. HANS LAUBER (Vienna) thought there was a close connexion between rapid physical growth and the development of myopia, and he would like to impress on both teachers and medical men the necessity of paying special attention to the eyes of children in whom they noticed excessive or precocious growth. He did not think that Professor Possek's anatomical theory was properly supported by facts. Though it was bad to work with excessive inclination of the head, yet myopia depended on many factors, and he did not believe that the gravity of the globe could act in the way suggested. If so, it should act alike in both eyes, and they knew that there were often different degrees of myopia in the two eyes.

Dr. G. LEVINSOHN (Berlin) explained his theory, which was briefly that habitual bending of the head, especially in children of weak constitution, caused a traction on the optic nerve and posterior pole of the eye which caused myopia by lengthening the axis of the eye. Treatment should be directed to improving the position of children at lessons.

Mr. ERNEST CLARKE (London) urged that in all private schools that horrible institution called evening preparation should be done away with. That kind of work was done when the child was tired, physically and mentally, and was exceedingly harmful to the eyes. He believed that excess of convergence over accommodation was the cause of this myopia, and he therefore insisted on a full correction of the myopia as an essential part of the treatment. Parents should be taught that fine needlework was bad for little girls' eyes. In the winter months he would have no class work done by artificial light.

Professor RALPH P. WILLIAMS (Sheffield) drew attention to the fact that girls suffered more than boys from defective vision. In some degree this might be due to malnutrition, being commoner among girls than boys; but a more probable explanation was that girls' eyesight was injured by the fine needlework, threading of beads, and pricking out with a pin of the outlines of animals, &c., which they were taught at school. They should be given work with large needles and large stitches. (The speaker handed round a specimen of the kind of work recommended). Books should be destroyed when they got dirty, because the contrast between the type and the paper was thus lessened.

Dr. BRINDLEY JAMES (London) objected to home lessons as they were usually carried on under conditions of defective light and bad ventilation. The general substitution of electric light for gas was in his opinion injurious to the eyes, as it caused people to work by unsuitable light. He would like to have all studies done at school by daylight.

Dr. MACKENZIE said that his objection to electric light was that the illumination was too great, and that it over-stimulated the eyes. He preferred a good ordinary

paraffin candle to read by, so long as it was placed near enough. Every specialist was inclined to exaggerate his speciality, but it was largely a question of compromise as to how many senses they were prepared to destroy in attaining civilisation. They must take the risk of home lessons if they were necessary, and make an effort to get the right kind of illumination.

Dr. KERR, replying to the discussion, said that Dr. Levinsohn's theory was the most important contribution to the myopia question they had had in the last 12 years. It contained a large amount of truth, but not the whole truth. When he was in Bradford people with myopia used to tell him they were "slack set up," and he thought that was a most expressive way of explaining the condition referred to. There was no doubt that electric light contained rays which were harmful to the retina, but they must take into account the physiological adaptation of the eye to differing conditions of environment. He quite agreed that abolition of home study would be an advantage to school children, and thought that older persons required more rest for their eyes.

Dr. A. L. SORESI (New York) contributed a paper on

Preventive Medicine,

in which he argued that this branch of science would never be successful if the medical profession was left alone in the fight, and that a general compulsory medical education, based on a good practical knowledge of anatomy, physiology, pathology, and hygiene, together with a general diffusion of such knowledge through all grades of society, was necessary to that end. The problem of infectious diseases, in his opinion, was more a social than a medical one. Medical science would never be able to prevent the existence of infectious diseases until social science had been able to eliminate the conditions which created the favourable ground where infectious diseases grew and multiplied.

SECTION V.—THERAPEUTICS.

THURSDAY, AUGUST 7TH.

President, Sir LAUDER BRUNTON, Bart. (London).

The PRESIDENT gave a brief address of welcome to the members, and then called upon Professor PAUL HEGER (Brussels) to introduce the discussion on

Defensive Measures of the Organism against Foreign Substances in the Blood.

He discussed, under the following subdivisions, the processes by which the organism protected itself from poisons introduced into the circulation:—1. Humoral defence, comprising the destruction of poisons by chemical means in the blood, their destruction by physical means such as adsorption, the defence by means of the osmotic equilibrium of the blood and by its chemical reaction, and the defence against microbes and their toxins. 2. Defence by phagocytes, including considerations of phagocytosis, chemiotaxis, and the influence of lipoid solvents. 3. Parietal defence, upon which Professor Heger laid special stress, and under which heading the part played by the endothelium of the cardiovascular walls was considered. The formation of endothelial secretions and the production of precipitins were discussed, as well as the phagocytic action of the endothelium. 4. The rôle of the liver and of glands producing internal secretions was then dealt with. The selective action of the liver for certain poisons, and the part played in this selection by the large vascular surface of that organ, by the leucocytes contained in it, and by the endothelial cells were successively passed in review. The importance of the liver in regulating the composition of the blood was emphasised, and the fate of substances fixed by the liver was discussed. Other questions dealt with by Professor Heger were the elimination of poisons, chemical changes taking place apart from the blood, and the complex subject of tolerance and intolerance.

Professor EMIL ABDERHALDEN (Halle), the second reporter, discussed in his important and interesting address the manner in which the organism protected itself against poisonous substances. He commenced by pointing out the important part played in this process by the digestive mechanism, by which all complex substances were broken down into simpler bodies, which were subjected to the activity of the liver cells before reaching the general blood stream, with the result that normally the body cells received a nutrient supply of constant character. This harmony was disturbed when the tissue cells or extraneous cells, such as cancer cells or micro-organisms, yielded to the blood substances retaining some of the specific characteristics of their source of origin. Even then there existed an important means of protection in the lymphatic system, with all its extensions, and the organs of excretion assisted in the protective processes by eliminating the poisons. Professor Abderhalden then discussed the formation of specific ferments to deal with toxic substances in the blood, and showed that the presence of certain specific ferments in the blood might be taken as demonstrating the presence of the substance to which they corresponded. He also laid stress upon the fact that the substances produced by these ferments might themselves be toxic.

Dr. EDGARD ZUNZ (Brussels), who was concerned with Professor Heger in the preparation of the report presented by the latter, emphasised the importance of physico-chemical phenomena, such as adsorption and surface tension as protective mechanisms, and referred to the part played by phagocytosis.

Professor S. J. MELTZER (New York), Professor J. J. ABEL (Baltimore), Professor R. GOTTLIEB (Heidelberg), Professor J. CITRON (Berlin), Dr. M. BREITMAN (St. Petersburg), and Professor W. E. DIXON (Cambridge) joined in the discussion which followed.

Professor HEGER and Professor ABDERHALDEN briefly replied.

An independent paper was read by Professor W. STRAUB (Freiburg) on Poison and Disease, in which an account was given of some researches upon experimental chronic lead poisoning.

The afternoon session was devoted to the reading and discussion of individual papers.

Professor A. KLAGES and Dr. E. SCHREIBER (Magdeburg) communicated a paper upon the Chemistry, Therapeutic Actions, and Toxicology of Certain Mercurial Compounds. These comprised compounds with dyes, such as fluorescin, azo and diazo pigments, and anthraquinone combinations. They discussed their attempts to prepare mercurial compounds in which the metal should be combined, not as a salt, but in a complex ion not easily decomposed. Dr. Schreiber described the effects of some of these compounds upon the spirillosis of fowls and also their employment as therapeutic agents in man.

Dr. M. ROCH (Geneva) read a paper on Poisoning by Pentachloride of Phosphorus. He described the case of a man, aged 37 years, working in a perfumery factory, who suffered from pain in the eyes and cough, followed by a violent coryza. Shortly afterwards he became weak and eventually slightly delirious. He showed the symptoms of nephritis, and after a month's illness his teeth became loose and he presented some ulceration of the gums which extended down to the bone. Later he developed signs of tuberculosis at both apices. Gradually he improved, but he remained very much debilitated.

Dr. LAVIALLE (Paris) described the uses of certain forms of condensed milk with added sugar in the treatment of vomiting in infants. He found that the sugar remained free in the milk and did not enter into combination with the casein. He believed that it was the sugar which lessened the tendency to vomit.

His Excellency Dr. CAMILGO CALLEJA (Madrid) read a paper entitled "Code of Contra-indications." The fundamental law of contra-indications was given in the form of a general rule not to interfere with vital reactions either by abating irritation or by promoting asthenic conditions. Certain exceptions were described and discussed.

Dr. FELIX DE BACKER (Paris) read a paper on Therapeutic Ferments.

FRIDAY AUGUST 8TH.

The morning session was devoted to a discussion on

The Action and Use of Remedies for Pain and Sleeplessness (excluding Anæsthetics, Local and General).

Professor A. R. CUSHNY (London), in opening the discussion, formulated the properties of the ideal soporific. It should act only on the seat of the disturbance—viz., the higher cerebral centres, it should induce its effects regularly, it should not be repugnant in taste or odour, and it should not be poisonous. The chief soporifics were then considered in the light of these criteria, including chloral, the sulphonal

group, veronal, paraldehyde, hedonal, and chloretone. The sulphonal group was regarded as unreliable, and even dangerous in some cases. Chloral was stated to lie under an undeserved suspicion that it depressed the heart and circulation. Professor Cushny was unable to find any reliable evidence that it exerted any such effects clinically. Veronal was placed with chloral at the head of the list of proved hypnotics. Paraldehyde suffered from its unpleasant taste and odour, and was not as reliable as the other two, though less likely to be taken habitually. The chief theories put forward to explain the actions of these drugs were then briefly reviewed, including those of Meyer, Lillie, and Verworn, and of these the first, which explained the action as depending upon the partition coefficient in lipoids and water, was regarded as fascinating in its simplicity and supported by a considerable amount of evidence. In the treatment of pain Professor Cushny maintained that progress had been slower, the chief advance in the last half century being the substitution of morphine for opium. The use of certain drugs of the phenacetin and salicylic type in the relief of headache and neuralgia was also discussed.

Dr. ROBERT JONES (Claybury), in approaching the subject from the clinical aspect, more especially in connexion with insane patients, maintained that the treatment was to break the habit of sleeplessness by removing the cause, which he classified as either physical, mental, or moral. He referred to various measures and drugs other than hypnotics directed to removing some of the physical causes of sleeplessness, such as high arterial tension and cardiac failure. He then passed in review a large number of hypnotic drugs, including opium, chloral hydrate, bromal hydrate, chloralamide, chloralose, validol, bromides, cannabis indica, hyoscine, the sulphonal group, and the urea compounds.

Dr. J. M. FORTESCUE-BRICKDALE (Bristol) examined the hypnotic and analgesic groups of drugs from the point of view of their chemical composition, and discussed the relationship between variations in composition and pharmacological activity.

Professor R. B. WILD (Manchester) referred to the use of drugs for the relief of pain in cases of chronic disease such as cancer. He believed that of the non-narcotic drugs one of the most useful was acetosalicylic acid, and that phenacetin was also of great value. He was of opinion that the analgesic properties of alcohol were too little recognised. He advocated the freer use of morphine in pain due to incurable disease.

Professor J. B. BRADBURY (Cambridge) discussed the use of the commoner hypnotics. He did not like sulphonal. He approved the use of veronal, and found that it was often not necessary to administer this drug more than twice a week.

Professor S. BARUCH (New York) referred to the value of hydrotherapy and to the use of the wetpack in sleeplessness. He discussed the mode of action of the latter measure.

Dr. ROCH made some observations upon the synergic actions of hypnotics, and described the use of such mixtures as veronal and codeine, morphine and heroin, and antipyrin and pyramidon.

Professor DIXON drew attention to a new fact observed by himself—viz., that the group of indifferent hypnotics all tended to increase the flow of cerebro-spinal fluid.

Dr. J. G. GARSON (Eversley, Hants) mentioned a case of tabes dorsalis in which small doses of heroin and of morphine produced alarming symptoms.

The PRESIDENT briefly referred to the introduction of bromides and to the views of the older physicians on the uses of opium.

Professor CUSHNY and Dr. JONES briefly replied.

In the afternoon session Professor T. G. BRODIE (Toronto, Canada) read a paper on

The Mechanism of Renal Secretion.

He maintained in opposition to the views of Ludwig and his followers that the glomerulus was not a filter, and that its activities were secretory in nature. He showed that secretion took place at a considerable pressure, and that if the kidney of an animal be removed during active diuresis and rapidly fixed the capsules and tubules were found to be much dilated. He also stated that during diuresis the pressure between the kidney capsule and the kidney was greatly increased and sometimes reached as much as 50 or 60 mm. Hg. This effect was only obtained during diuresis, and could not be explained by the vascular changes.

Professor A. PIC and Dr. BONNAMOUR (Lyons) read a paper entitled "A Contribution to the Histo-physiological Study of Diuretic Drugs."

M. L. RENON, M. P. DEGRAIS, and M. DREYFUS (Paris) gave their results of Radium Treatment in Myeloid Leukæmia. They found that radium exerted a powerful effect in stopping for a time the fatal progress of the disease, but that it was not curative. They recommended its use with other forms of treatment.

Professor J. T. CASH and Dr. W. J. DILLING (Aberdeen) communicated a paper on the Action of the Seed and Contained Oil of Croton Elliotianus. They found that the oil possessed very definite properties in augmenting intestinal peristalsis and increasing secretion in doses of 0·1 c.c. or less, and that its effective purgative action was relatively free from local irritation.

Professor NESTOR TIRARD (London) read a short paper on the Treatment of Diabetes and Glycosuria. He described his results with a number of drugs recommended in the treatment of these conditions.

Dr. OSCAR JENNINGS (Le Vésinet) read a paper entitled, "The Pharmacodynamic Law governing the Painless Cure of Morphinism."

SATURDAY, AUGUST 9TH.

The section divided into two subsections: (*a*) Pharmacology; and (*b*) Balneology and Physiotherapy.

The meeting of the Subsection of Pharmacology was held in the Institute of Pharmacology, University College, London, under the Presidency of Sir LAUDER BRUNTON. Some interesting demonstrations were given, among them one by Professor J. J. ABEL, Dr. L. G. ROWNTREE, and Dr. B. B. TURNER (Baltimore), showing a method for the Removal of Diffusible Substances from the Circulating Blood of Living Animals. The method, which is in effect an artificial glomerulus, consists in conducting blood from the carotid artery of an anæsthetised animal through a number of celloidin tubes surrounded by saline solution, the blood being returned to the animal by the jugular vein. Sodium salicylate could be removed by this means to the extent of from 10 to 20 per cent. of the quantity administered. It was suggested that the method might be of use for the removal of diffusible poisons from the blood.

Professor ABEL also showed specimens of the Tropical Toad, Bufo Agua, and of the Crystalline Principles obtained from the Secretion of its Poison Glands. He has found that this secretion contains a large percentage of adrenalin.

Professor W. E. DIXON (Cambridge) and Professor W. D. HALLIBURTON (London) showed that the formation of cerebro-spinal fluid was augmented by all the members of the group of indifferent hypnotics, and also that drugs introduced into the cerebro-spinal fluid in the upper part of the spinal column were absorbed into the general circulation and produced their specific effects almost as rapidly as when they were injected directly into a vein.

Professor J. T. CASH and Dr. W. J. DILLING (Aberdeen) showed the Action of the Toxic Principle of Micretoma Benthami.

Other demonstrations were given by Professor CUSHNY and Dr. BARBOUR (London), Professor W. STRAUB (Freiburg), Dr. E. P. CATHCART (Glasgow), Dr. A. J. CLARK (London), and Mr. G. R. MINES.

The meeting of the Subsection of Balneology and Physiotherapy was held at the Imperial College, South Kensington, Professor NESTOR TIRARD being in the chair.

A number of papers were read, among them one by Professor A. COMBE and Dr. ED. CERESOLE (Lausanne) on

The Dietetic Treatment of Chronic Entero-colitis.

They regarded milk and carbohydrate foods as exerting an anti-putrefactive effect in the intestines, whereas meat foods exert an opposite effect. They therefore recommended in the dietetic treatment of acute entero-colitis that the diet given should contain as large a proportion as possible of starchy farinaceous foods, and that nitrogenous foods and meat fats should be restricted. In the acute periods of the disease they suggested that the diet should be exclusively farinaceous for a few days without any addition of milk. In the chronic cases, between the acute periods the diet should be at first lacto-farinaceous, and then meat and eggs might be added in reduced proportions.

Professor S. BARUCH (New York) read a paper entitled

The Need of Instruction in the Remedial Uses of Water.

Dr. Baruch lamented the neglect of the principles of hydrotherapy in this country and in the United States of America, and after reviewing some of the uses of hydrotherapeutic procedures, urged the importance of adequate instruction in the medical schools and universities in regard to the subject of hydrotherapeutics. His paper evoked a considerable discussion, most of the speakers strongly supporting his contentions.

Professor HUGO KRONECKER (Berne) presented a paper on

The Action and Importance of Inorganic Salts in Mineral Waters.

A large number of observations were reviewed, and the importance of the inorganic salts, such as those of sodium, potassium, calcium, and magnesium, was discussed.

Dr. NEVILLE WOOD (London) contributed an interesting paper on

Some Advantages of British Health Resorts for Foreign Invalids.

Dr. Wood pointed to the characters of the mineral springs in Britain and to the value of the climatic conditions and of the very numerous maritime resorts, and predicted that when the inhabitants of Central Europe became as well aware of our climatic resources as we are of theirs, the movement of invalids between the continent and our islands will be reciprocal instead of as now in one direction only, and that away from our shores.

Dr. P. KOUINDJY (Paris) read a paper on

The Methodical Application of Kinæsitherapy.

Under this heading he discussed the manner of applying systematic massage, mechanotherapy, gymnastics, and re-education. He insisted upon the importance of a rational application of these agents with a due appreciation of what they were required to effect, and strongly condemned their employment empirically or by those unskilled in their practice.

Dr. DREUW (Berlin) read a paper on

Hydrovibration,

in which he described various apparatus for internal and external massage by means of water pressure, together with the indications for their use.

MONDAY, AUGUST 11TH.

The morning session was occupied by a discussion upon

The Comparative Value of Cardiac Remedies,

introduced by Professor R. GOTTLIEB (Heidelberg), who pointed out that, in order to explain the action of digitalis and other cardiac drugs and to construct a rational plan of treatment, the results of different methods of investigation such as those of clinical observation and pharmacological experiments must be coördinated and brought into line. He mentioned in support of these views that the actions of drugs where there was disturbance of function might be quite different from those observed under physiological conditions. The action on the heart of all substances classed in the digitalis group was essentially the same, but there were definite quantitative differences in the ease with which the various preparations could be taken up and stored by the heart. All these drugs also acted on the walls of the blood-vessels, those of some regions being constricted while others, such as the kidney vessels, were dilated. When given by the mouth the differences in the power of absorption and in relation to the digestive ferments were of great importance—e.g., digitoxin is relatively resistant to the ferments, while strophanthin is easily destroyed, and has therefore only a slight action when given by the mouth. If the absorption from the intestine was delayed owing to severe congestion, so that the ferments had longer time in which to act, the action of digitalis preparation given by the mouth was greatly reduced. The intravenous injection of digitalis preparations marked a great step in advance, and had the further advantage that it obviated the risk of digitalis dyspepsia. Although it would seem best at first sight to use digitoxin or one of the other bodies isolated in a more or less pure condition from the leaves, yet up to the present the combination and form in which the active substances occurred in the leaves proved to be the best. In the tincture and in the purified extract, digipuratum, the glucosides were still in their original combinations in the form of their tannic acid compounds (digitannoids).

Professor THEODORE C. JANEWAY (New York) presented an interesting report dealing more particularly with his experience in the clinical use of cardiac remedies from the standpoint of their efficiency in combating definite perversions of function. He wished to focus attention upon the efficiency of the circulation and our ability to influence it. He discussed the subject under the following heads: drugs in cardiac insufficiency with auricular fibrillation, drugs in cardiac insufficiency with normal rhythm, drugs in other disturbances of rhythm, drugs in angina pectoris, and, lastly, the treatment of recent endocarditis and initial cardiac insufficiency. In his opinion the best results from digitalis were obtained in a special group of cases which he described—viz., cases of well-compensated mitral disease, in which auricular fibrillation with great tachycardia set in acutely. Next to these, cases with the type picture of gradual cardiac insufficiency with general venous stasis and œdema derived most benefit. The choice of the preparation of digitalis used was, he maintained, largely a matter of taste, provided an effective preparation were obtained. He personally preferred the infusion, and failing that digipuratum. He was of opinion that failure to obtain satisfactory results from digitalis therapy in cases suitable for its use was evidence of an inefficient preparation, insufficient dosage, or an improper mode of administration.

Dr. E. M. HOUGHTON (Detroit, Michigan, U.S.A.), referred to the importance of the physiological assay of the heart tonics of the digitalis group, and mentioned the method which he had introduced for the purpose and to some modifications and amplifications of it.

Dr. J. D. WINDLE (Southall) discussed the action of digitalis on the heart in cases of rheumatic heart disease with regular heart action and accompanied by dropsy. He had found that digitalis acted best when dropsy was present, and he regarded the influence on the dropsy as a measure of the use of the drug when it failed, as it frequently did, to influence the rate, rhythm, or size of the heart to any considerable extent. He had found that digitalis often acted as well, as certainly, and as speedily on the general symptoms of heart disease with dropsy and regular pulse as it did in cases with auricular fibrillation. He had found that cases which developed sinus irregularity under digitalis usually did well, but cases which developed other irregularities under digitalis were not as a rule of favourable prognosis.

Dr. A. MARTINET (Paris) urged that it was necessary to study the maximal and minimal blood pressures in order to form an opinion regarding the action exerted upon the circulatory system by any agency (pharmacological, physical, or otherwise), and that a record of the maximal pressures only was not of any value. He stated that digitalis always lowered the minimal pressure and generally increased the difference between the maximal and minimal pressures.

Professor H. E. HERING (Prague) stated that although disturbances of conductivity contra-indicated the use of digitalis in general, yet in cases of marked irregularity of the heart's action it should not be withheld if the other symptoms suggested its employment.

Dr. E. BONNEFOY (Cannes) referred to the value of high-frequency currents as a mode of treatment in cases of heart disease.

Dr. ROCH described some observations upon Convallaria majalis and Adonis vernalis, which showed no effect from these drugs as cardiac tonic or diuretics when employed in cases of cardiac disease. He suggested that they should be withdrawn from the list of drugs employed in cardiac cases.

Professor CUSHNY admitted that digitalis gave relief in non-fibrillating cases of heart disease, and pointed out that in auricular fibrillation the curative action obtained was due to reduced conductivity and improved contractility.

Professor K. F. WENCKEBACH (Strassburg) summed up the actions of digitalis by stating that it produced slowing in cases with high frequency, regulation in cases with arrhythmia, strengthening in cases with weak heart-beat, and improvement by action on the vessels in cases with feeble peripheral circulation.

Professor L. F. BISHOP (New York), Dr. F. H. WILLIAMS (Boston, U.S.A.), Dr. D. W. SAMWAYS (Topsham, Devon),

Dr. J. F. HALLS DALLY (London), and Dr. BREITMAN (St. Petersburg) also joined in the discussion.

Professor GOTTLIEB and Professor JANEWAY briefly replied.

Afternoon Session.

Dr. JOHN PARKINSON and Dr. R. A. ROWLANDS (London) contributed a paper on

Strychnine in Heart Failure.

They recorded observations on a number of cases of heart failure carefully controlled which demonstrated that 1/15 gr. of strychnine sulphate administered hypodermically did not produce any effect upon the heart and circulation within an hour of its administration.

Dr. ALEXANDER MORISON (London) discussed the paper.

Dr. MARTINET (Paris) read a paper on

The Treatment of Hypophyxia.

The condition of hypophyxia he described as being constituted by the association of a low differential pressure (i.e., the difference between the maximum and minimum pressure as measured by Pachon's oscillometer) with a high viscosity of the blood. It was said to be characterised by a feeble pulse, habitually cold and cyanotic extremities, a tendency to engorgement of the venous system, varicose veins, and great sensitiveness to cold. It was often associated with inadequacy of the ductless glands. The treatment suggested was to stimulate the circulation and to make up for the glandular inadequacy.

Dr. BREITMAN (St. Petersburg) read a paper on

Heart Massage.

He first described the principles upon which his method was based—viz., influencing the contraction of the heart reflexly by means of stimuli of various kinds applied to the skin over the chest wall. He referred to the proceedings employed by the Japanese under the name of Kuatsu to restore consciousness in those rendered unconscious in ju-jitsu exercises. The method employed by Dr. Breitman consisted in the application of vibrations to the surface of the body, beginning with a soft applicator along the fourth, fifth, and sixth intercostal spaces, and then along the neck in the direction of the great veins. Afterwards by means of a special applicator he applied the vibrations either over the præcordial region or, better, from the back between the left scapula and the spine. This procedure was kept up for from five to eight minutes. Dr. Breitman recommended heart massage in a variety of conditions of cardiac disturbance, both organic and functional, as well as in cases of shock and collapse.

Dr. DE KEATING-HART (Paris) read a paper on

The Pathogenesis and Treatment of Cancer.

He described two methods of treatment and showed a number of photographs illustrating the results he had obtained. The first method was called fulguration and was applied to operable cases in association with surgical interference. It consisted in sparking of high frequency and high tension. The other method was described as thermoradio therapy. High-frequency currents were used to heat the tumour, and at the same time a bag of ice cooled the skin. The X rays then applied did not burn the skin and were enabled to act on the tumour beneath.

Dr. J. A. SHAW-MACKENZIE (London) read a paper on

Some Reactions of the Blood to Cancer Inoculation,

in which he brought forward evidence of a protective mechanism in animals inoculated with cancer tissue prepared by a method suggested by Dr. Purvis, of South Africa, or with fresh cancer tissue. The reactions appeared to be analogous to the reactions in antidiphtheritic and other antitoxic sera and vaccines. At the same time he did not necessarily commit himself to a parasitic origin of cancer. Treatment on these lines of cases of inoperable cancer was in progress, but results were as yet too few to permit of definite conclusions.

Dr. F. W. PRICE (London) read a paper on

The Action of Digitalis on the Blood Pressure in Man.

He described the results of three series of investigations comprising 32 cases in all, the systolic pressures being taken by means of a Martin's sphygmomanometer. He found that in a considerable percentage of cases fluctuations occurred in the systolic blood pressure from day to day. As a result of the administration of digitalis he found a rise of pressure in one case only, while in several cases there was a fall. He therefore concluded that, judged by the methods in use for observing blood pressure clinically, the internal administration of digitalis did not raise the blood pressure in man.

M. MICHEL COHENDY and M. D. M. BERTRAND (Paris) read a paper on Sensitised Viruses in Treatment, in which they described their results with sensitised living vaccines in infections due to the pneumococcus, streptococcus, bacillus coli, Friedländer's bacillus, and other organisms.

TUESDAY, AUGUST 12TH.

The subject for discussion was

Thermal Treatment: Its Indications, Limitations, and Risks.

In the absence of Professor LANDOUZY, a brief abstract of the report prepared by him in collaboration with Dr. JEAN HEITZ was read. The objects of thermal treatment at spas were regarded as to restore disturbed function of organs, and to re-establish the normal actions of the lungs, heart, kidneys, and other organs. Its benefits depended on the phenomena of reaction induced by the methods of cure. In the great majority of cases it was not capable of producing a *restitutio ad integrum*, but controlled the inflammatory processes around various lesions, promoted the absorption of leucocytic infiltrations, and tended to restore cellular functions. Among the risks incidental to its employment were the possibility of exciting the infective phenomena or intoxications, which were the original causes of the lesions. Another was the re-awakening of an inflammatory focus, as in the treatment of cholelithiasis at Vichy, and yet another, that in emphysematous or bronchitic patients, a cure wrongly carried out might re-awaken a latent tuberculous lesion. Other risks were that certain cures were fatiguing to the heart, while others might lead to toxic conditions in latent cases of chronic nephritis.

Professor S. J. VINAJ (Turin), who also was prevented from attending, contributed the second report. He devoted himself more strictly to the beneficial and harmful effects of heat and cold applications to the organism, and gave an interesting and instructive account of his own and other worker's observations. He has found that there existed for each form of thermal application an indifferent point at which it produced no appreciable effects. This, he stated, was about 35°, 36°, or 37° C. for water and between 20° and 22° C. for air. He discussed the defensive mechanisms possessed by the organism against disturbances of external thermal relations. He went on to describe the effects of heat and cold upon the bodily functions. He stated that the therapeutic limits for the application of water were a minimum of 10° C. and a maximum of 38° C. Beyond these limits excessive reactions were obtained which were liable to be injurious. Among the reactions to which he referred were those of the blood-forming organs, and *albuminuria a frigore;* another important point was the effect upon arterial pressure.

Dr. R. WATERHOUSE (Bath) and Dr. FORTESCUE FOX (London) joined in the discussion which followed. Dr. Fox referred to the condition of thermal debility which might result from the wrong application of hyperthermal baths. He pointed out that the human body, though it was capable of reacting satisfactorily to dry heat, was far less tolerant of heat combined with moisture. He had himself employed hyperthermal baths with benefit, but he was careful to limit their application to very brief periods.

Professor PAUL HEGER (Brussels) read a paper prepared by him in collaboration with Professor KRONECKER, entitled

The Cause and Treatment of Mountain Sickness.

They did not accept the generally received opinion that this condition was entirely due to the diminished pressure of oxygen at high altitudes, but believed that the actual diminution of the atmosphere pressure produced effects upon the pulmonary circulation and the right heart, and that these considerations ought to be borne in mind in the treatment of this condition.

Dr. J. BENDERSKY (Kiew) was of opinion that the nervous system was concerned in the production of this malady.

The afternoon session opened with a paper and demonstration by M. GASTOU (Paris), M. FERRYROLLES (La Bourboule), and M. LANCIEN (Paris) on

Colloids in Biology and in Medical Therapeutics.

They presented some interesting observations upon the composition and properties of Bourboule water, illustrated

by means of the ultramicroscope and cinematograph. They concluded that the Choussy Perriere water of La Bourboule was a natural colloidal arsenical serum endowed with radio-active properties, and they had found it useful in a variety of conditions when given hypodermically.

Dr. A. COMANOS (Cairo), M. G. STODEL (Paris), and Dr. FOX joined in the discussion which followed.

Dr. LENNOX WAINWRIGHT (Folkestone) read a paper on

Sun Cure and Pigmentation.

He maintained that the short rays of sunlight reflected from the sea and from snow produced pigmentation much more rapidly than the influence of direct sunlight. The pigmentation produced was a protective reaction to prevent the skin being injured.

Dr. GORDON EVANS (Davos-Platz) discussed the paper.

Dr. PRESTON KING read a paper on the Therapeutic Value of Radio-active Waters. He discussed the activities of the Bath waters in relation to their radio-active properties.

Dr. HENRI BÉCLÈRE (Paris) read a paper on Cryotherapy, describing the applications of carbonic acid snow and liquid air in therapeutics.

Dr. MAURICE FAURE (Nice) read a paper on a New Treatment of Spasmodic Paralysis. The method consisted in the daily exercise of all the muscles affected by the contracture until they were rendered permanently supple.

SECTIONS XVII. AND XVIII.—JOINT SESSION OF THE SECTION OF STOMATOLOGY WITH THE SECTION OF HYGIENE AND PREVENTIVE MEDICINE.

MONDAY, AUGUST 11TH.

A discussion on

The Supervision of the Health of Children of 1 to 5 Years

was opened by Dr. W. LESLIE MACKENZIE (medical member of Local Government Board, Scotland), who dealt with the subject in its psychological and administrative aspects. He pointed out that while in France about a quarter of the total population between the ages of 2 and 6 was provided for in Écoles maternelles, public and private, in this country children at that age were almost totally unprovided for from a public health point of view. The problem was how to establish for the ages 1 to 5 the same systematic organisation as had now been established for the ages after 5. The question as to when a child should begin school had not been definitely settled yet, but there was a general agreement that the ordinary school was not the place for children of those tender years. He was a strong advocate of the nursery school, which he thought the best system so far advocated, and whose advantages were fairly supported by the experience of France and Germany. The work also of Dr. Montessori in Rome went to show that the ordinary conceptions of school discipline and school teaching were not adapted to children from 3 to 5. He thought that one method of covering at least part of the field at these ages would be a correlation of the work of medical inspection of school children on the one hand, with a search for the sequels of infectious diseases on the other. In this connexion he referred to the valuable results obtained by Dr. David Forsyth at the Westminster medical inspection centre for children under school age.

Mr. W. W. JAMES (London) treated the subject from the point of view of the dental surgeon, and said that the general health of children at this age depended largely on two factors—viz., the efficiency of the teeth and the freedom of the mouth from pathological lesions, the chief of which were dental caries and pyorrhœa alveolaris, both of which gave rise to oral sepsis. Rickets was one of the commonest causes of dental caries, which when neglected led to a train of symptoms, among which were mentioned loss of function of the teeth, impaired mastication, and consequent digestive disorders; infection of other parts, such as otitis media with its attendant complications, enlargement, and inflammation of lymphatic glands. As to removal of temporary teeth, in his opinion this procedure was absolutely necessary for the cure of any of the train of symptoms enumerated.

Dr. DAVID FORSYTH (London) followed with a description of the work which was being carried out at the medical inspection centre in Golden-square. Among the commonest defects found were: 1. Decayed teeth—which gradually increased from 2 per cent. in the second year to 18 per cent. in the third, 34 per cent. in the fourth, and 64 per cent. of children examined in the fifth year. 2. Tonsils and adenoids—percentage increased in each successive year of age. 3. Rickets occurred in 13 per cent. of children in the first year to 26 per cent. in the second year, after which its incidence declined. They had found the Notification of Births Act a great help, as it not only enabled them to get hold of the babies, but often of older children at their own houses at the same time. The utility of their work was limited owing to the fact that it was entirely voluntary, and they had no powers of compulsion to deal with defects found or with neglectful and ignorant mothers. If they could get rid of this neglect, which was largely due to ignorance, by educating the mothers, the problem would be well on the way to being solved.

Dr. L. CRUET (Paris) recommended a diffusion of stomatological ideas among medical men, nurses, mothers and all instructors of children. Medical men should be educated in dentistry and dentists in medicine, and both should work in harmony.

Dr. J. SIM WALLACE (London) emphasised this point of view, and he went so far as to advocate a school for medical men to learn dentistry. In his opinion the text-books on physiology were greatly to blame for their neglect of proper teaching in the physiology of the functions of the mouth. He considered sugar to be most harmful to young children and its excessive consumption to be largely responsible for the prevalence of dental caries. He did not think the tooth-brush was any use.

Mr. J. G. TURNER (London) did not at all agree in Dr. Wallace's condemnation of the tooth-brush, and showed by diagrams on the blackboard how three surfaces of all the teeth could be effectually cleaned by the simple method of tilting the brush. As to food, he condemned all sticky substances and advocated the use of coarse meal and dry bread, also apples, carrots, and turnips. In his opinion it was absurd to insist on the filling of the teeth of all school children. The numbers were too great and there was not time enough. In the majority of cases resort would have to be had to extraction.

Dr. WOODS HUTCHINSON (New York) did not believe in all that faddism about food. The three most important requirements of food were that it should taste nice, give a sense of resistance in mastication, and a comfortable feeling inside when it got down. He would let a child eat what it wanted, when it wanted, and as much as it wanted. He would give plenty of sugar, plenty of butter, and let the teeth have plenty to do.

Several speakers advocated the nursery school for children of from 3 to 5 years of age. Among them Dr. J. KERR (chief school medical officer, London County Council), who recommended that teachers should determine for each child a kind of physical and mental index, instead of putting them into standards according to age; and Dr. W. S. ARKLE (London), whose view was that children in the nursery school should not be under a teacher in any sense of the word, but in charge of a sensible person who would let them play when they wanted to and sleep when they wanted to.

Mr. J. F. COLYER (London) considered that the State ought to take over the charge of these children and advocated a Ministry of Public Health.

Dr. H. L. KEITH SHAW (Albany, U.S.A.) hoped that the diagnosis of "teething" in so many children's ailments, so much beloved of nurses and of some medical men, would soon be a thing of the past now that medicine was becoming more scientific. He thought dental prophylaxis in young children was not properly appreciated by dentists.

Professor MAGGIORI (Milan) put in a plea for the cinematograph as a means of educating and interesting children in the hygiene of the teeth, and Mrs. LESLIE MACKENZIE (Edinburgh) said that as the result of their system of "tooth-brush drill" in Edinburgh children were now able to educate their parents.

Dr. SMITH (Lynn, Massachusetts) condemned the excessive use of the tooth-brush and of tooth powders, washes, &c., by adults.

Dr. MACKENZIE, in his reply, said he could not agree with Dr. Wallace in his denunciation of sugar, which he believed to be physiologically necessary for children. The mechanical theory of decay of the teeth was a fact, but it by no means exhausted the question.

Dr. J. C. MCWALTER (Dublin) contributed a paper advocating State-endowed Hospitals and a State Medical Service.

SECTION XXIII.—HISTORY OF MEDICINE.

THURSDAY, AUGUST 7TH.

President, Dr. NORMAN MOORE (London).

After the admirable Presidential Address on the History of Medicine in England, a short abstract of which appeared in our issue of August 16th (p. 495), Miss F. MELIAN STAWELL read a very interesting and original paper on St. Luke and Virgil.[1]

Professor RICHARD CATON (Liverpool) read a paper on

The Temples, Hospital, and Medical School of Cos,

in which he described the remains uncovered by the excavations of Professor Rudolf Herzog of Tübingen. The location of this temple had been so long covered up as the result of earthquake, vegetation, and so forth, that it had become purely a matter of conjecture. The temple precinct consisted of three terraces in a series of steps on the side of a mountain.[2] The lowest presented a three-sided stoa on the eastern side of which was an extensive series of baths, fed by earthenware pipes from the spring of Hippocrates. The north side contained many rooms in two or three storeys, probably consulting and waiting rooms, operating rooms, dispensary, library, and teaching rooms, for Cos was a great medical school. The tanks for ceremonial ablutions, the culinary department, the votive tablets, and the gymnastic establishment were referred to, and also the huge altar on the second terrace, which formed the scene of the fourth Mime of Herondas. On the south side of an ancient temple, westward of the altar, was a rectangular coffer, believed by Herzog to have been a treasure chamber, but the author thought it more likely to have been the den of the sacred serpents. A second temple stood to the east of the great altar. On the third terrace stood the large temple of Asklepios. In its stoa were the sleeping places for men and women respectively, where the sick awaited illuminating visions from the god. Higher up the mountain were two springs. The priest physicians were men of education, who advocated the simple life and the love of beauty. The daily routine of treatment, by baths and exercises, by medicaments and diet, varied by religious ceremonies, with stimuli to mental interest, all combined to cultivate a calm, hopeful condition of mind eminently helpful to recovery.

Professor ANDREA CORSINI (Italy) contributed a paper on

Figurative Arts in connexion with the History of Medicine.

Professor Corsini traced historically the study of the connexion existing between art and medicine. In the rudimentary state of art two circles and four lines were enough to reproduce a man, his head, body, two arms, and two legs. That was the first study of anatomy in art, which culminated in the drawings of Leonardo da Vinci, Michaelangelo, and other great artists. Charcot's works—"Dæmoniacs in Art," "The Sick and Deformed in Art," and the "New Iconography of the Salpêtrière"—which were inspired by study of a Rubens picture in the Church of St. Ambrogio in Genoa, were referred to. Figurative art, he said, might be a guide furnishing precious elements to students of the history of medicine. Monuments and inscriptions, Greek and Latin authors, have been fruitfully studied, but figurative art has not yet been as fully considered as it merits. The author quoted the "Discorsi di Monsignore Vincenzio Borghini" as confirming in set terms a view advanced by himself from the study of pictures that Florentine physicians of the Renaissance were used to wear a red dress. Pictures and drawings reproduce medical subjects, for which grouping and colour are of importance, better even than plastics. The Dutch School has furnished the greatest number of such, and is particularly rich in anatomical subjects. Before the Christian era painful subjects were avoided, hence we have few pre-Christian graphical representations of medical subjects remaining; but these became more common after Christianity had found its inspiration in pain and exalted the relief of suffering. Humanism, however, reverting towards paganism, preferred the splendours of landscape, the exaltation of female beauty or of male force. Few artists practise their art for purely æsthetic reasons, and it is difficult to sell pictures of horror and sadness. That the importance of figurative arts to the history of medicine has remained so long hidden for us is perhaps due to this. Who knows, Professor Corsini asked, whether by observing the birth of Christ it would not be possible to find in some unheeded detail interesting elements for the history of obstetrics? While admiring Eleuterio Pagliano's painting of the death of Luciano Manara, a painting that offers nothing for the physician, Professor Corsini observed reproduced in it a bottle of corrosive sublimate, bearing the legend on a strip of paper "for inbalsamation." This bottle, even though it be anachronistic, represents a method of conserving cadavers which has an historical importance. Other subjects of study were referred to—the miniatures in codices, xylographs, engravings, &c.—which are the most neglected monuments in the history of medicine. He suggested that by making as many reproductions as possible, registering and cataloguing them in regard to periods of time, and publishing everything, we might at length obtain a "Corpus Iconographiarum" of great interest and utility. In this connexion he referred to the new museum of the History of Medicine lately opened in London through Mr. Wellcome's noble initiative.

Dr. WALTER J. DILLING (Aberdeen) read a paper on

Girdles, their Use in Obstetric Practice,

in which he said that distinct evidence was obtainable from classical writings showing that the girdle in relation to women had a mystical signification, as emblematic of the hymen virginis. It also took an important part in the marriage ritual of Rome, as well as amongst the Greeks, Macedonians, Russians, Japanese, and the natives of New Guinea. The connexion between the girdle and pregnancy was shown by the word *incincta*, which meant sometimes girdled, sometimes ungirdled, but in the vulgar tongue referred to a pregnant woman. The Greek Eileithyiai presided over childbirth, and Theocritus referred to the Eileithyiai as "girdle loosing." The girdle customs in relation to pregnancy of the Romans, Jews, Turks, Chinese, Japanese, Kalmucks, American Indians, Central Australians, and African tribes were described. Later European instances were noted from the sixteenth century down to 1906, when the author witnessed the use of a girdle in a Catholic house in Dublin. He had decided that delivery would not occur for one and a half hours at least, but a neighbour brought a leather belt about 1½ inches broad and applied it loosely round the chest without any special ceremony, producing a distinct psychological effect, with the result that delivery took place in half an hour. The 70 instances collected by the author can be divided into girdles applied during pregnancy and removed when labour begins, and those applied only at the commencement of labour. The first class might be explained on the supposition that they afforded support to the abdomen, and the loosening at labour conforms with the general folklore belief that everything, even to the opening of doors, must be loosened at a confinement. The second is more difficult. It might be the application of a *vis a tergo*, but considering the frequent looseness of the application and the combination with ritualistic customs it may be thought that they were instances of sympathetic magic.

Dr. F. CHAVANT (Grenoble) contributed a paper on

St. Anthony's Fire.

The paper consisted of a series of extracts, with a running commentary, from various authors, beginning with Virgil's Georgics (Book III.) and Lucretius' "De Rerum Natura" (vi. 66). He referred to the various names of the disease, its symptoms in the three stages of onset, access, and cure, and related the history of the Abbey of St. Antoine and its relation to the treatment of the disease—whence its name, St. Anthony's Fire—from the bringing of the body of St. Anthony the Hermit from Egypt in 1080 onwards, and related two cases of the disease in quite recent days in Dauphiny. He described the moral and religious treatment of the afflicted as practised, according to Dassy, at the Hôpital de Saint Antoine, as well as the surgical treatment—including therein an account of the method of producing anæsthesia as narrated by Guy de Chauliac in 1363—and the medical treatment. He concluded with a sympathetic tribute to the Fathers of St. Anthony, who often paid the price of their lives for their devotion to suffering humanity, and detailed the tragic end of Charles de la Cardonnière, a religious of St. Antoine, towards the end of the sixteenth century.

[1] THE LANCET, August 16th, 1913, p. 507.
[2] THE LANCET, March 10th, 1906, p. 696.

Mr. D'ARCY POWER (London) read a paper on

The Lesser Writings of John Arderne.

After a few details of Arderne's life (1298(?)-1368) Mr. Power gave an account of his Mirror of Blood-letting and his Book of Simples. Arderne's treatment of facial paralysis, the use of charms, the epidemic sore-throat, the treatment of cases, the treatise on gout, the "governaunce of nefretykes," the treatment of impacted urethral calculus, strangury, hæmaturia, gonorrhœa, ulceration of the penis, scabies, diseases of the male organs of generation, diseases of the eye, Arderne's purging pellets, fistulæ, the treatment of wounds, the instrumental treatment of retention of urine, constipation, the classification of medicines, rabies, the diseases of women, hiccough, extraction of teeth, indigestion, a never-dying light, a sleeping-draught, fevers, hysteria, were referred to, and many clinical records. Cases of cancer of the male breast, epithelioma of the scrotum, balanoposthitis, poisoned foot, hysteria in the male, caput succedaneum, traumatic tetanus, and dermoid cyst of the scalp were cited. The Commentary on Ægidius Carboliensis Mr. Power does not think can properly be ascribed to Arderne. He concludes that it is clear that Arderne was at heart an operating surgeon, and that he had learned the great secrets of success in surgery—fearlessness as regards bleeding, cleanliness, and infrequent dressing of wounds. In addition to skill he had sound common sense, wide reading, command of a good library, and wide interests outside his professional knowledge. Much sidelight is thrown by his writings on the social customs of his times.

FRIDAY, AUGUST 8TH.

Professor K. SUDHOFF (Leipsic) read a paper on the Anatomical Representations from the Antique in the Mediæval Tradition of East and West, in which he maintained that pictorial representation of the human body had its origin in Alexandria, and thence spread into Europe.

Papers were read by Professor E. HOLLÄNDER (Hungary) on the Relations between Art and the History of Medicine; by Professor G. ELLIOT SMITH (Manchester) on Evidence of Disease in the Remains of Ancient Egyptians; by Professor G. STICKER (Bonn) on the History of "Alpenstich," and by Dr. CHARLES SINGER (London) on the Doctrine of Contagium Vivum before Pasteur.

Napoleon's Last Illness.

Two papers on the illness and death of Napoleon the Great were read by Dr. ARNOLD CHAPLIN (London) and Dr. LEONARD GUTHRIE (London). Dr. Chaplin's paper was entitled "The Last Illness of Napoleon Buonaparte," and covered some of the ground already traversed by the author in his book, and which was reviewed in an Annotation in THE LANCET of Jan. 14th, 1913, p. 115. Dr. Guthrie's paper, in which he contends that Napoleon at the close of his life suffered from hypopituitarism, is printed in full in our present issue.

Egyptian Gynæcological Instruments.

In the afternoon, after Professor BARDUZZI had read a paper on Italian Medicine in the Middle Ages and of To-day, Mr. HENRY S. WELLCOME (London) made an interesting communication on Græco-Roman Surgical Instruments represented in a specimen of Egyptian sculpture in the Temple at Kôm-Ombos, on the Nile. There is an altar in front of the seated deity in this sculpture, on which stands an upright panel, divided into four compartments or divisions. This panel is probably intended to represent a surgical instrument cabinet or case, each compartment of which contains a number of gynæcological instruments that were employed in midwifery in Ptolemaic times. These instruments are probably not strictly Egyptian because the tablet and sculpture do not date back farther than 150 B.C., but they are of much interest. Although there is little evidence of surgical instruments having been used in obstetrics in ancient times, there can be little doubt that these sculptures depict the instruments used at accouchements by the Græco-Roman accoucheurs of the period. Mr. Wellcome regards this piece of sculpture as the only complete and authentic representation of instruments used in gynæcology in Ptolemaic times, and an attempted reconstruction of the instrument cabinet has been placed by him in the Historical Medical Museum.

Other Papers.

Dr. P. CAPPARONI (Rome), in a paper on the Sepulchral Inscriptions of the Early Christian Physicians in the Catacombs of Rome, stated that the first physician who came to Rome was a Greek, Archagalo del Peloponneso, son of Lisania, who arrived about 219 B.C. From this time onwards for several centuries Roman medicine was mainly in the hands of Greek freemen and slaves.

Dr. M. B. RAY (Harrogate) and Mr. L. H. DUDLEY BUXTON contributed a paper on Some Pathological and other Conditions observed among the Human Remains from a Prehistoric Ethiopian Cemetery in the Southern Sudan, Africa. The materials dealt with in this paper were excavated by Mr. Henry Wellcome. The latest of the burials must have occurred about 700 B.C. The authors paid special attention to the state of the teeth in the skulls examined, and noted that "food packing" was much commoner among the Ethiopians than in Europeans, although the latter are much more subject to caries.

Dr. A. H. FREELAND BARBOUR (Edinburgh) read a paper on Soranus on Gynæcological Anatomy. The object of the paper was to draw attention to the exact knowledge of female pelvic anatomy which Soranus possessed and the place he gave to it in gynæcological teaching. After describing the critical investigation of the manuscripts of Soranus and Muscio by Dietz, Ermorius, Rose, and Ilberg, Dr. Barbour stated the conclusions of the latter as follows. A Byzantine physician, who had before him the original book by Soranus, "Concerning Female Complaints," dating from the second century, and also the sixteenth book of Aelius—a later production of the sixth century—produced a new work under the same title as the original of Soranus. He limited this paper to an examination of the chapter on anatomy, and summed up the characteristics of it thus: "Soranus broke through the traditions of his school, and placed anatomy in the forefront in the teaching of gynæcology; he possessed, in the second century, a knowledge of the female genital tract which, so far as it goes, is as exact as that of to-day; his writing bristles with facts, is never diffuse, and furnishes a striking illustration of how the matter of a man's teaching affects his style, making it at once concise and lucid."

Dr. GEORGE PARKER (Bristol) concluded the day's proceedings with an interesting paper on the History and Powers of the Barber-Surgeons in Great Britain from the twelfth century to the amendment of the Medical Act in 1866.

In order to give members an opportunity of visiting the Museum of Medical History at 54A, Wigmore-street, W., and the exhibitions of objects of medico-historical interest in the King's library at the British Museum and in the Royal College of Physicians of London, the section did not meet on Saturday, August 9th, but that evening a number of its members were hospitably entertained to dinner at the Royal College of Physicians by the President, Dr. Norman Moore.

MONDAY, AUGUST 11TH.

The History of Small-pox and Vaccination.

Dr. S. MONCKTON COPEMAN (London) contributed a paper on the Early History of Vaccination, and in view of this fact Dr. J. C. MCVAIL (Edinburgh), in his communication on the History of Small-pox, confined himself to the period before the end of the eighteenth century. Dr. McVail said that the earliest evidences of a knowledge of small-pox belonged to Hindustan and China, long before the Christian era. In 980 A.D. by Ali Abbas, and much more definitely by Avicenna a little later, the infectious nature of the disease was recognised. The main prevalence of the disease in the ninth and tenth centuries in Europe was attributed by some historians to the Arabians, who carried it by their wars to the peoples of the Mediterranean shore, whence it was borne northwards by the Moors; but the Irish monastic chronicles record various earlier outbreaks in the seventh and eighth centuries. After discussing the mortality of small-pox at different periods and tracing the history of inoculation, Dr. McVail considered the various types of small-pox, its epidemic periodicity, its age incidence, and its case mortality. He concluded with the statement that while the fatality depends largely on the age incidence and on the absence of vaccination, the age incidence depends on the epidemic periodicity, so that statistics of fatality are of comparatively little value where neither age incidence nor epidemic periodicity is known. Vaccination, he added, of course, cuts across all these relationships and establishes a classification of its own in respect both of age incidence and case mortality rates.

Other Papers.

Dr. W. H. HAMER (London) contributed a valuable paper on the History of Epidemiological Research during the last 70 years, in the course of which he maintained that the accumulation and development of knowledge had now at length made it clear that there must again be a return to the original discipline as conceived and exploited by Hirsch in the "fifties," "sixties," and "seventies." Dr. Hamer submitted that the need of the time was a striving after unity, and he concluded with a sketch of the lines upon which epidemiological inquiry would most profitably proceed.

Dr. WICKENSHEIMER (Paris) read a paper (in the French language) on Medico-Astrological Systems of the Ninth, Tenth, and Eleventh Centuries, elaborately illustrated by diagrams of the various organs of the body and the diseases thereof attributed to the zodiacal signs, the sun, moon, and the planets Saturn, Mars, Jupiter, Venus, and Mercury respectively, and the remedies for such diseases, critical days, &c. The paper was deeply interesting, and was evidently based on great research and much study, and it was highly praised by the President.

Papers were read by Mr. J. H. BELL on the Bibliography of Bernard of Gordon's "De Conservatione Vitæ Humanæ"; and on Military Medicine in the Civil War, referring especially to an outbreak of enteric fever among the Royalist troops during the siege of Oxford, by Dr. J. B. NIAS (London).

Dr. H. LEWIS JONES (London) contributed an interesting paper on the History of Electro-therapeutics, and Professor FRASER HARRIS (Canada) reopened the Harvey-Cesalpinus controversy, with further evidence in favour of Harvey's title as discoverer of the circulation of the blood.

Among the other papers was one by Dr. E. STREETER, on the De Morbo Gallico of La Cumarcino; a note on Thomas of Wesham, by Mr. LAURIE LAWRENCE; a communication in Italian by Professor MODESTINO DEL GAIZO on Borelli's Du Motu Animalium studied in Relation with Harvey's Du Motu Cordis; and a philosophical and historical paper on Hindu Medicine by Mr. S. M. MITRA, embodying the results of 25 years' study of Hindu methods in ancient and modern times.

TUESDAY, AUGUST 12TH.

The last day's proceedings opened in the morning with an attractive paper on the Historical Relation of Medicine and Botany, by Sir FRANCIS DARWIN, and this was followed by a number of interesting communications: Galen's Knowledge of Muscular Anatomy, by Dr. MILNE; Cruveilhier, by Dr. LETULLE; Some Points in the History of Tropical Medicine, by Sir RONALD ROSS; Gaelic Medical MSS. Preserved in Scotland, by Professor MACKINNON; The Native Medical Knowledge of the Highlands in the Middle Ages, by Dr. GILLIES; Wandlung in der Auffassung und Bekämpfung des Kurpfuschertums, by Dr. NEUSTÄTTER; Amir-Dolvathe d'Amassie, Armenian Physician of the Fifteenth Century: His Life and Works, by Dr. V. H. TORKOMIAN; and a MS. of Gui de Chauliac, by Dr. J. A. NIXON.

At the afternoon session further papers were as follow: The History of Medicine and Surgery in America, by Dr. FASSETT; Medicine in Coins, by Dr. F. PARKES WEBER; Terra Sigillata: a Famous Medicament of Ancient Times, Mr. C. J. S. THOMPSON; Some Eighteenth Century Obstetrical Forceps in the Museum of the Royal College of Surgeons of England (Dusée's, Grégoirés, and Deitrich Busch's), by Mr. ALBAN DORAN; A Note on the History of Epidemic Mental Disorders, Past and Present, by Mr. NELSON HARDY; Medical Practice among the Ancient Egyptians, by Dr. GARRY; and lastly two papers by the secretaries of the section, one on the Clinical Apparatus of Hippocrates, by Dr. J. D. COMRIE; and Notes on the Typhus Character of the Plague of Athens, by Dr. RAYMOND CRAWFURD.

At the conclusion of the last paper the session was declared closed by the PRESIDENT, who, in a graceful speech, dwelt on the importance of the papers which had been read before the section and on the interest with which its proceedings had been followed. The section of the History of Medicine, by the success of its first session, had, in his belief, established itself as a permanent feature in International Medical Congresses.

A vote of thanks to Dr. Norman Moore for his excellent services in the chair was then proposed by Professor SUDHOFF and seconded by Dr. CAPPARONI in very warm terms, and was carried with acclamation.

New Inventions.

A NEW NEEDLE FOR NASAL OPERATIONS.

IN submucous resection of cartilage for deflected septum nasi I have found difficulty when completing the operation in bringing down and suturing the flap, for to obtain a good result the flap incision should be made some distance from the orifice of the nose. The hollow curved needle made at my suggestion by Messrs. Mayer and Meltzer, Great Portland-street, London, W., facilitates the introduction of sutures and has these advantages:—It is made of pure nickel, and therefore will not rust; the flaps are easily punctured

without any dragging; horsehair or fine iodised catgut readily passes from the funnel-shaped proximal end to the distal end, where it can be caught with forceps and held whilst the needle is withdrawn. By this method the danger of tearing through a soft flap, which exists when an ordinary curved needle with its eye blocked with a suture is used, is avoided.

HERBERT LUND, M.B., B.C. Cantab., F.R.C.S. Eng.
Manchester.

THE AMERICAN PROCTOLOGICAL SOCIETY.—The fifteenth annual meeting of this society was held at Minneapolis, Minnesota, and at the meeting many interesting papers were read, a report of which has now been circulated. Dr. Louis J. Hirschman, in his presidential address, claimed that the work of the proctologist should not be confined merely to the last six or eight inches of the colon, but that he should be prepared to treat diseases of any part of the whole intestinal tract. He suggested the formation of a special section of the American Medical Association dealing with gastro-enterology and proctology. Dr. Rollin H. Barnes read a paper on a Method of Operating on Fistula in Ano without Cutting Muscular Tissue. It consisted essentially in dissecting out the wall of the fistula through an incision made external to the anus. Dr. Alois B. Graham reported a case of a woman, 27 years of age, who on three occasions had had intestinal obstruction due to the formation of a hard fæcal mass in a congenitally dilated colon. Dr. Graham saw her at the time of the third attack, and as the patient would not consent to any radical operation, he had to content himself with removing the impacted fæcal mass. Subsequently he learned that she had had a fourth attack of intestinal obstruction, and that she had died three days after operation for its relief. Dr. T. Chittenden Hill presented an interesting analysis of the relative frequency of the various affections of the rectum; it was founded on 3000 cases. Hæmorrhoids were the most frequently seen, for they formed 41 per cent. of the whole; abscesses and fistulæ formed 18 per cent., and pruritus ani 8 per cent. In 2 per cent. of the cases malignant disease was present, while non-malignant tumours formed 1·5 per cent. of the total number. Dr. Granville S. Hanes described some observations and experiments which he had made on the large intestine. He had shown by means of bismuth enemata that an injection of the rectum would travel upwards even as far as the cæcum without any evidence of the existence of antiperistaltic movements. Also by means of skiagrams he showed that it was not possible to pass a rigid instrument beyond the first half of the sigmoid. Dr. Dwight H. Murray, whose views have already been published in THE LANCET in *résumé*, read a paper on Pruritus Ani. He did not believe that any gross lesion was present in the majority of the cases of pruritus, and even when it was present, he held that it had nothing to do with the cause of the itching. He believed that the pruritus was due to a microbic infection of streptococci and other organisms; and this opinion was shown to be true by the fact that treatment with an autogenous vaccine was most successful in removing the itching.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 13, 1913.

Continuity.

SIR OLIVER LODGE'S Presidential Address at the Birmingham meeting of the British Association, which has been so widely published in the lay press that we do it no wrong this week by reproducing only the latter half, is a thoroughly brave performance. His words show how well he knew that the results of his 30 years of experience of psychical research had brought him to conclusions which would not be palatable to many of his audience, but he has resolved to put on record, in justice to himself and to his co-workers in those outlying provinces of scientific investigation, a conviction "that memory and affection are not limited to that association with matter by which alone they can manifest themselves here and now," that, in other words, what we call death—bodily death—does not abolish personality. This is continuity indeed—and some might say continuity with a vengeance, but we welcome Sir OLIVER LODGE'S pronouncement, because he has made it in certain terms and on a certain occasion. He is no smatterer in the mystic, and the sessions of the British Association are the recognised opportunities for recording advances in science. By stating that, as a sequel to the elaborate and famous work in physics done notably by himself and Sir J. J. THOMSON, he has been able to assure himself that under certain conditions discarnate intelligence may interact with us on the material side of any imaginary barrier, and thus produce manifestations that may come, however indirectly, within scientific ken, he places the whole subject of psychical research upon a different basis from any which it has previously occupied. This will undoubtedly be a source of deep regret and even of some irritation to many scientific men, while to others it will come as a hopeful inspiration. But Sir OLIVER LODGE has merely been as good as his word. He has thrown down a challenge to those who utter "comprehensive negative generalisations from a limited point of view," and he conveys a promise—for this, we think, is implied in his words—that the results of investigations which have already been made will be published by pioneers in the latest territory to become, in his belief, subject to our scientific sway.

There must, of course, be great difference of opinion as to what is a limited point of view, as there must be considerable uncertainty as to what constitutes a barrier between the material and the ethereal. Sir OLIVER LODGE sets no limits to his own point of view, and suggests the possibility, and even more than the possibility, that we shall find in ether the medium of continuity, proving the non-existence of any barrier whatever. Now, it must be remembered that this is not a violent, visionary or poetic assumption. It may be regarded as a deduction from what we actually know of the ether, and of the energies of the various modes of motion propagated therein. We seem to be asked to regard the ether in Sir OLIVER LODGE'S address on Continuity—though he does not employ the words and though it is easy to see where reservations could be put upon them—as the primordial substance from which the universe has been evolved. The discovery of a primitive principle from which the contents of what man knows as the world have been developed, and in which, moreover, other worlds and world systems have had their origin, has of course been the ideal of philosophy throughout the ages, and Sir OLIVER LODGE is supplying a famous example of evolutionary wisdom when he replaces, say, the water of Thales by an omnipresent and all-producing ether. The old Greek's theory was not necessarily unsound in its grand conception because the scientific attainments of his day—the acquisition of facts and collection of observations—were so scanty that he could attribute without contradiction to water power and properties which it did not possess. Our increasing wisdom has compelled all theories concerning the primordial substance to undergo the process of natural selection; and the claims of the ether will be tried in the same way. As these claims are placed before us we have to consider how far what we know supports them, and how far the undoubted harmonisation of, say, the principles of optics with the creation of force or energy from the ether may be used as a legitimate reason for deductions having even larger meaning. In doing this we must preserve the right scientific attitude. While following Sir OLIVER LODGE in his proviso that obscure phenomena may be expressed simply if properly faced, we must not answer every question of every sort with the bald expletive "ether." Similarly we must not advance against the claims of ether our inability to picture its existence save by what we call imagination; for the non-appearance of anything alike perfectly uniform and omnipresent is in accordance with what might be expected. The right course is to test the claims made for the ether side by side with physical and chemical phenomena, so that we may advance in our understanding.

Among popular beliefs few are, or were until recently, more popular than that the scientific man is usually a materialist. Over and over again we hear that the scientific man, inasmuch as he cannot be expected to believe in what he cannot see, or time, or measure, or weigh, cannot admit the possibility of a future existence or be other than sceptical about what are generally known as religious doctrines. The address delivered at Birmingham by the Principal of the City University is a complete answer to such ill-informed criticism of the modern scientific outlook, and a large school of scientific men will be grateful to Sir OLIVER LODGE for the profoundly religious expressions with which he concludes a strenuous sermon. The real state of the case is that what the modern scientific man cannot believe beggars belief absolutely; and there is none

among us who so clearly walks hand in hand with miracles, who is so cordially prepared to acknowledge as possible for the future what looks impossible for the present, who is so reluctant to lay down boundaries for his imaginings, as the scientific leader. The fear might be that he should become too much the romantic man, but here a remedy is being supplied by the increasing information of the world at large, which must compel the actual workers to produce material results for the increase of the wisdom, wealth, and comfort of the population, however far ahead of all care for contemporary amenities the genius of the scientific leaders may be ranging.

Bacterial Food Poisoning.

ALTHOUGH considerable obscurity still surrounds the etiology of food poisoning there are certain issues being cleared by modern investigation. One of the early theories in regard to causation, of course, was based upon the assumption that food sometimes developed toxic qualities owing to putrefactive changes—that toxins or ptomaines, in fact, were elaborated as products of these changes. Hence examples of food poisoning were commonly described as cases of ptomaine poisoning, and the term is still widely used by both the profession and the public. It would appear to be unquestionably the fact that toxins are responsible in many instances for the alarming symptoms of poisoning which sometimes follow the ingestion of food in regard to which there was at the outset no outward suspicion of harmfulness. But though poisonous products may not be due to a putrefactive process they may well be engendered by the activity of a specific disease-producing organism. Modern workers are inclined to dismiss the putrefactive hypothesis and to accept the theory of the contamination of food by organisms of which the B. enteritidis is a representative amongst other bacilli in what is known as the Gaertner group. It must be remembered that in by far the majority of cases there is no suspicion of the food being unfit for consumption; it looks, tastes, and smells sound, and yet may be infected with pathogenic potentialities, while in the case of putrefaction the food would in all probability appear repugnant to one of the three senses. The most intelligent person may, of course, be unsuspecting and be caught by the Gaertner bacillus, though he possesses an olfactory sense which would easily reject a putrefactive taint. It is well known that some persons exhibit a taste for certain foods when there are obvious signs of a putrefactive process having begun in them, as in the case of venison, game, and cheese, and yet we rarely hear of poisonous symptoms following as a penalty for exercising this peculiar addiction. On the other hand, a ham or tongue may be a particularly choice one, exhibiting no signs of offence at all, and yet may prove to be tainted either with the active bacilli of the Gaertner group or their toxins or both. Such negative characters form the most disturbing feature of the case, while they introduce considerable difficulty in regard to setting up a scheme of preventive measures that can be observed by the consumer.

So far the history of the outbreaks of food poisoning indicates definite sources of infection. In a very valuable report recently presented to the Local Government Board by Dr. W. G. SAVAGE on Bacterial Food Poisoning and Food Infections the general conclusion is arrived at that in those outbreaks due to infection of the food with bacilli of the Gaertner group—and these probably, he says, include the great majority of outbreaks—the food is contaminated in some cases because it is derived from an animal suffering from a general or local disease caused by one or other member of the true Gaertner group, and in others because, subsequent to slaughter, Gaertner group bacilli from outside sources have gained access to it. In reviewing the whole question of the sources of infection Dr. SAVAGE is of the opinion that the view which best explains all or most of the phenomena of food poisoning is that these food-poisoning outbreaks are due to infection of the food with virulent Gaertner group organisms (or other special bacilli). These may be derived from animals which are either at the time suffering from disease due to these bacilli or acting as carriers of these bacilli. This view serves to explain both the outbreaks associated with the consumption of the meat of a diseased animal, and those in which infection occurs during or after the preparation of the food.

It is obvious from these observations that the problem of prevention presents considerable difficulties. If, as Dr. SAVAGE points out, the original conception of food poisoning as due to the ingestion of food in a state of incipient decomposition had proved to be correct, prevention would have been a comparatively simple matter. Progress indeed in the direction of preventive measures could, of course, be made if the causation was confined to the consumption of meat derived from diseased animals, by the insistence of a stricter supervision over the slaughter of animals, and by guarding the meat when it is cut up from a possible contaminating environment. But when we turn to the majority of food poisoning cases, which are due to the contamination of healthy meat with food-poisoning bacilli derived from sources other than the food itself, we at once see that the responsibility of keeping food preparations away from contaminating sources rests largely with the consumer or the kitchen authority. Great attention is demanded, therefore, in regard to keeping the premises where foods are prepared or waiting for preparation in a cleanly state. As Dr. SAVAGE points out, the investigation of the condition of the premises and of the actual procedure practised has almost invariably shown that cleanliness was not observed in the preparation of these materials, nor were the premises, speaking generally, of such a kind as would ensure cleanliness and freedom from contamination. Definite opportunities for excretal contamination (derived, for example, from rats or mice) of the food during preparation or subsequently were usually present. This should serve not only as a warning to the householder but suggests that the kitchens and stores at hotels and other places where food is prepared should be subjected to periodical inspection. The Gaertner group of organisms are the agencies in the causation of outbreaks of gastro-enteritis or food poisoning, and preventive measures must lie in the direction of checking the operations of this group.

The Medical Profession and Criminal Lunacy.

THE address of Dr. DAVID NICOLSON delivered before the Section of Forensic Medicine at the recent International Congress of Medicine is printed on another page. It will be found to deal lucidly and forcibly with some of the aspects of a subject of importance to the public and to the medical profession, and one, moreover, in which the public is liable to take an extreme and exaggerated interest when an appropriate occasion rouses its curiosity and stimulates its imagination and sympathy. A recrudescence of public excitement in respect of HARRY THAW has followed on his escape from confinement; and the recognition of his case as a profitable subject for journalistic enterprise serves as an opportune reason to remind us of the essential necessity for the maintenance of public confidence in the action of legal tribunals. In cases determined by medical evidence the trust placed by the community in the guidance supplied to it by the medical profession is of paramount importance. Dr. NICOLSON explains, with authority derived from wide and prolonged practical experience, what the nature of that guidance should be in cases where criminal responsibility forms the principal issue at and after a trial for any crime, and more particularly for that of murder, and the perusal of his observations upon a special branch of jurisprudence should remind us of the increased importance of the part played by forensic medicine in the administration of justice, and of the progressive influence of medicine generally in moulding the whole policy of internal and domestic government. In connexion with the determination of criminal responsibility, in cases where the life of a human being hangs in the balance, and in which the weight of medical evidence must decide which way the scales will incline, we need hardly remind our readers that progress in the direction of a more humane attitude towards crime has not been confined to matters in which the medical profession makes its voice heard. We need not review the steps by which the criminal law and procedure have kept pace with the advance of civilisation and the development of humane sympathy with our fellow men when brought to the bar of justice, but we may point out that within comparatively recent years counsel defending a prisoner and calling witnesses on his behalf had no right to sum up the evidence of those witnesses, but had to rely upon one speech only on behalf of his client delivered before they entered the box, and before their evidence and their cross-examination had supplied material demanding comment and explanation by both sides in the interests of common justice. The tendency of such conditions to weaken the effect of medical evidence given on behalf of a prisoner can easily be imagined, and, of course, the inequality of the procedure must have been felt no less where other than medical evidence was given. Again, the right of prisoners and their wives to give evidence has been accorded in late years, and still more recently the institution of the Court of Criminal Appeal within the memory of the youngest of us has added a safeguard against fatal error of which Dr. NICOLSON reminds us in referring to the case of JAMES JEFFERSON. Before 1908 no doubt the directions of Mr. Justice BIGHAM to the jury in this case would have been taken into consideration at the Home Office, and a similar result might even then have been achieved so far as the prisoner was concerned; but this would have been a different matter from the public discussion and enunciation of principles and the establishment of a legal precedent.

No one can accuse Dr. NICOLSON of a sentimental sympathy with the viciously inclined person who, yielding to savage passions which another might control, places himself within the grip of the law. He denies emphatically the heredity of crime while making full allowance for the effects of environment and education, and while laying stress upon the hereditary transmission of insanity as a mental condition or neurosis. The principles upon which he asks that medical opinion should be based are simple enough, and should hardly arouse dissent from any but those whose sympathy with the convicted criminal in his admittedly terrible position overrides the more reasonable sympathy which we should all feel with the victims and potential victims of crime, whether it be capital or otherwise. Indeed, the principles to which we have referred might be enunciated without reference to the death penalty and would be equally applicable if that last dread punishment were not reserved for those who wilfully and of malice aforethought take the lives of their fellow men. Dr. NICOLSON asks, to quote his own words, "that no lunatic shall be hanged," and "that no mere criminal shall, on the plea of insanity, be allowed to escape the due punishment for his act of murder." The tests applicable and the difficulties which the medical practitioner will have to surmount if he is to influence rightly the course of justice, discharging a responsibility the weight of which none called upon to undertake it can fail to realise, are admirably dealt with by Dr. NICOLSON. The inherent obscurities of the problem to be solved are not disguised by him, and it is easy to recognise the fact that those obscurities have been felt, and must continue to be felt, by those engaged as judges and advocates in the trial of prisoners, whatever attempt may be made to define legally the mental conditions inconsistent with criminal intent. The "knowledge of right and wrong" test, established by precedent, has grave limits. The vagueness of a definition which leaves unexplained the meaning to be given to the words in which it is embodied has not made easier the task of those who have had to face cross-examination upon opinions expressed in terms not of their own selecting. In the case of JAMES JEFFERSON, already referred to, Mr. Justice BIGHAM assumed that the medical opinion, "I think he knew he was doing wrong," imputed a sane judgment to the prisoner with regard to the particular act for which he was being tried, whatever his general mental condition might be. "Knowledge of right and wrong," however, is by no means a phrase which accurately defines itself, nor does it suggest any standardised mental condition. A murderer may, and frequently does, give himself up promptly to the police, indicating perhaps where he has left the body of his victim, and adding possibly a detailed account of how he did an act which obviously he knows will interest the police, will lead to his being detained in custody and punished, and which, he may even realise, will be reprobated

by his fellow men. Whether we regard this as satisfying our own views of what should constitute "knowledge of right and wrong," it is quite likely to be accepted as such knowledge by a jury, or even by a judge. Yet it is clearly consistent with delusions affording a motive for murder, or with hallucinations imposing such murder as a fancied duty upon the murderer, or with a mental condition which causes him to derive gratification from his act. In other words, what may be treated as "knowledge of right and wrong" by laymen administering the law may have existed side by side with insanity in a man who is a lunatic, medically recognisable as such, and who, according to the principle with which Dr. NICOLSON asks us to acquiesce, ought not to be hanged.

We are, however, living in an age in which a developed humanity and sense of duty towards our fellows are guided and rendered more certain in their action by increasingly accurate scientific equipment, and in which the tendencies of our knowledge are towards prevention as well as towards such cure as in the case of crime may be afforded by detection and punishment. Dr. NICOLSON holds that "no medical man is fully equipped for the practice of his profession unless he has had some months' experience—the more the better—as a medical officer in an asylum." To lack of such experience he ascribes the existence of preventable criminal lunacy finding this flaw in our social defences to be due in a large number of cases to the neglect of symptoms which should indicate the desirability of certification and treatment in an asylum; and he points to the Mental Deficiency Bill as promising the future machinery by which the development of criminal lunatics will be arrested. This machinery will render effective the recognition of mental enfeeblement which may be the precursor of insanity, and the power to treat such enfeeblement appropriately must surely some day have its effect in places where no such power has before existed and where the unwillingness of the patients or their relatives has proved an insurmountable obstacle to the enforcement of needed precautions. We may refer also to the National Insurance Act as a measure which should contribute in due course to the prevention of criminal insanity by facilitating the recognition of early symptoms of mental decay in a class in which lack of timely recognition and absence of facilities for treatment have produced sometimes marked and regrettable results. In this as well as other phenomena of disease much is to be hoped for as the result of preventive measures proposed and carried out largely by the medical profession, and the importance of medical work in lunacy, coupled with the growing confidence of the public, should encourage us in the performance of duties towards the State of which our predecessors had little or no experience.

SIR JONATHAN HUTCHINSON'S MUSEUMS.—These museums, which were started and equipped by Sir Jonathan Hutchinson, one at Haslemere and the other in connexion with the Graduates' College and Polyclinic in London, have now passed to trustees under the will of the late distinguished surgeon, wherein, however, no provision is made for their maintenance beyond any expression of his wishes made in his lifetime. With regard to the institution at Haslemere, which is insured for no less a sum than £10,000, an effort is to be made, led by the inhabitants of the Haslemere district, to raise the money necessary to retain and maintain the museum in the town, where the family of Sir Jonathan Hutchinson are willing that it should abide.

Annotations.

"Ne quid nimis."

THE STUDY OF LUNACY AS A CAREER FOR YOUNG MEDICAL MEN.

THERE are probably over 1000 medical and 20,000 lay persons engaged in the care of the insane in the hospitals, asylums, and licensed houses of the United Kingdom, for the last report of the Commissioners in Lunacy to the Lord Chancellor showed that there were practically 140,000 registered insane persons in England and Wales. The care of the insane, therefore, indicates a definite career for a large number of medical men. The Mental Deficiency Bill, recently passed, shows yet another addition to the responsibility of medical men who have sympathy with the study of the mind or who have a leaning towards a fuller acquaintance with physiological psychology than is afforded by the ordinary career of a medical man. It is known that the Board of Commissioners in Lunacy, with its four medical men and four barristers, is about to be changed into a Board of Control with a paid chairman and three additional members—one of whom must be a woman, and the other two a medical man and a barrister. This Board is to have the official control of all mental defectives in this country (England and Wales). The Lord Chancellor's Visitors, consisting of two medical men and one barrister, continue to supervise officially those persons in respect of whom the Lord Chancellor, through the Court of Chancery, exercises control. The official stipend of the Commissioners in Lunacy and the Lord Chancellor's Visitors is fixed at £1500 a year, and those who fill these posts are, as a rule, especially qualified by experience in asylums for the insane. Each public asylum in the United Kingdom—a county or a borough asylum in England and Wales, and a district asylum in Scotland and Ireland—has a medical man as its official head, and the stipend of each varies from about £400 to £1500 or more with certain fixed emoluments. Upon the medical staffs of these asylums are other medical men who are the assistant medical officers, and these are paid sums varying from about £150 a year, with board and residence, to £500 a year, with a house and certain advantages. Within the last few years there have been complaints in the medical and lay press as to the tardy preferment of assistant medical officers, and the "asylum" service has suffered with other services—as also has general practice—from the dearth of candidates to fill vacancies. Some of the public authorities responsible for the administration of the larger asylums have been considering fresh methods for improving the service by augmenting salaries, by granting "study leave" as is now done in the Government services, and by considering various social factors. The examining bodies have taken thought how the prospect of asylum medical officers may be improved by granting diplomas in psychological medicine to those on the staff of asylums who qualify especially in chemical physiology, neurology, bacteriology, histology, and psychology. The Universities of Cambridge, Leeds, and Edinburgh in particular, and the Royal College of Physicians of London (for its membership), recognise a proficiency in these subjects as qualifying for the attainment of a special diploma or recognition in psychological medicine, which is now a compulsory portion of the medical curriculum. There is still wanting the coördination of the whole Lunacy Department of this country into a special civil service, as in Ireland, but a great step has been reached by the passing of the Asylum Officers' Superannuation Act, under the clauses of which any person who has served a certain number of years in English or Welsh asylums and is of a

certain age obtains a fairly liberal pension. This pension for asylum servants, towards which they all contribute, is calculated generally upon a fiftieth of the salary and emoluments for each year of service. It must be admitted that many asylums are in somewhat remote country districts, but there is scope for research work and for the study of normal and abnormal psychology, for experience in administration, and for the better understanding of human nature—an essential to success in any career. We do not desire to do more than place the facts of a medical career in the asylum service of this country before intending candidates. Many medical men are unsuited for such a career, not because their ability to obtain the needed scientific equipment is wanting, but because certain qualities and dispositions are necessary which are rare in any person. But to those who may choose this line of work there are great compensations. There is an assured living, a right to a pension at an early age, life with country pursuits, ample time for study, reading and introspection, also the feeling that help is being administered to the most appealing as well as the most pitiable of the afflictions which can visit humanity. It would be a real help to medical officers in asylums to be affiliated to the Medico-Psychological Association of Great Britain and Ireland, which offers rewards for research work and which is aiming to improve their status and their prospects in the service. The association's library is at 11, Chandos-street, London, W.

THE MEDICAL INSURANCE COMMITTEE.

AT the last meeting of the Medical Insurance Committee, which was held at 429, Strand, W.C., Dr. G. E. Haslip presiding, a satisfactory financial statement of a year's working was read and the balance sheet, ending Dec. 31st, 1912, duly certified by the auditor, Mr. R. Freame Baker, was received and approved. The chairman's report on the working of the committee for the year 1912 demonstrated steady progress of business in all branches of insurance, the special features of the year being the continued growth of the income derived from life insurance and the insurance of motor cars. After paying expenses for the year 1912 there is a surplus of £471, which, added to the £180 brought forward from the year 1911, left £651 to be disposed of at the discretion of the committee. In the income and expenditure account the sundry commissions earned have increased from £1169 in the previous year to £1464. The amount returned to insurers has increased from £668 to £714. The working expenses show an increase, the development in the clerical work being considerable. The following figures show the total premium income from the start of the agency in 1907: Total income: 1907, £1238; 1908, £1469; 1909, £2037; 1910, £3905; 1911, £5439; 1912, £7677. Since the inception of the Medical Insurance Committee £2293 have been returned to those insuring through the agency, while the wider objects of the committee have also been fulfilled, inasmuch as it has already distributed the sum of £378 to deserving medical charities, while a distribution made at the meeting brought the total sum voted in this way to £760. The utility of the committee to the medical profession is undoubted, and it is most satisfactory to be able to report the increasing scope of the work.

THE THREATENED RECRUDESCENCE OF YELLOW FEVER IN RIO DE JANEIRO.

THE city of Rio de Janeiro, with nearly a million inhabitants, has suffered greatly in the past from the ravages of yellow fever which attacked especially the numerous European immigrants who landed at that port. These latter persons being non-immunes supplied much of the susceptible material upon which the infection maintained its virulence and upon which it worked with fatal effect. During the 26 years extending from 1877 to 1902 no fewer than 34,314 lives were sacrificed by this malady, giving an average of 1320 deaths per annum. In 1903 the municipality, impressed by the complete success which had been achieved at Habana and elsewhere in the extinction of yellow fever through the adoption of modern scientific methods, commenced an active campaign against the disease in Rio de Janeiro, and against the local conditions which fostered its prevalence. Important works for the sanitary improvement of the city were then begun, including a comprehensive drainage scheme and embanking of the water-front; water-courses were cleared of obstructions, and a "mosquito brigade," comprising some hundreds of men divided into gangs of 10, began operations in every section of the town. Compulsory notification of yellow fever under a heavy penalty was put in force, and arrangements were made for the isolation of cases in wards screened to prevent access of the stegomyia mosquito, the transmitting agent of the infection. During 1903 the results of the campaign were hardly yet observable, for 1118 notifications were received, and of these cases 584 proved fatal. In 1904 the number of recognised attacks fell to 118 and the deaths to 48. In 1905, much to the disappointment of the citizens, there was a rise in the incidence of yellow fever, 608 cases and 289 deaths being reported; but this increase was explained by the fact that early in the year a number of attacks had been erroneously notified as bubonic plague, and consequently no precautions had been taken to screen these patients from the bites of the stegomyia mosquitoes. During 1906 the number of yellow fever cases fell to 77, of which 42 had a fatal termination. From the beginning of 1907 to the end of 1912 the disease was practically extinct in Rio, the few occasional cases heard of being in every instance traced to imported infection brought on shipboard from affected ports in Northern Brazil, such as Manaos, Para, Pernambuco, and Bahia; these instances were easily dealt with and in none of them did the infection spread. The campaign therefore had been beyond all doubt completely successful. Unfortunately the freedom of the city from yellow fever for six years led in the latter portion of that period to a relaxation of the measures which had hitherto been so carefully carried out, and it began to be remarked in 1912 that mosquitoes were again appearing in greatly increasing numbers. Certain public-spirited citizens, led by the *Correio da Minha*, a journal widely read in Rio, began to make inquiries, and these showed that the operations of the mosquito brigade had been slackening for some time. It appeared also that the wages of these men had fallen into arrears, and in consequence some of the men had quitted their posts and sought other employment, the vacancies remaining unfilled. The fumigation and disinfection service had also been neglected, the admitted reason for this being that there was a scarcity of funds to carry it on. Early in 1913 rumours became rife that yellow fever cases were occurring, but that they were reported under other names. Quite recently several undoubted cases of the disease were notified in the residential suburb of Engenho Novo, and the serious aspect of these occurrences was that they could not be traced to imported infection. It is, therefore, believed that yellow fever has once again established a foothold in Rio de Janeiro, and that this has been the result of the municipality's neglect to continue the enforcement of the preventive measures which had previously proved so successful in ridding the city of the scourge. The chief of the Public Health Department of Rio, Dr. C. Seidl, is an able and competent officer, but if he is not supplied with the necessary funds it cannot be expected that he can efficiently protect the city from the return of yellow fever. In an

official "note" which was recently issued he endeavours to allay public alarm, and states that he can "guarantee" to the citizens, both native and foreign, that there will be no yellow fever epidemic in Rio. His staff, he says, with its present equipment is quite able to "circumscribe and stamp out" any focus of the disease that may arise owing to the ease with which infection coming from Northern Brazil may be imported, especially from Bahia, where the malady is now very prevalent. But he adds that the medical supervision of passengers arriving from suspected ports is rendered nugatory by the passengers themselves who fail to give correctly the addresses to which they are proceeding. Notwithstanding Dr. Seidl's "guarantee," he evidently experiences some anxiety concerning the existing situation, for when concluding the official note he "begs and appeals" to the medical practitioners of Rio "*in the present emergency*" to notify forthwith to him even the mildest case of fever, or any instance which affords the slightest suspicion of yellow fever. We understand that Dr. Seidl's view is that the recent deaths certified as yellow fever are really plague. It is to be hoped that it is not yet too late for the municipality to admit their mistake in allowing relaxation of the preventive measures, and to take immediate steps to atone for their past apathy by voting the necessary funds to re-establish the mosquito brigade and the fumigation service on their old footing, and also to carry on the campaign generally against yellow fever with the same zeal that marked its commencement in 1903.

HOSPITAL PROBLEMS.

THE rapidly increasing complexity of modern conditions of living is affecting the hospital problem severely in more ways than one. The ever-present trouble of expenditure *versus* income was brought prominently forward on Sept. 4th by the statistical report of the King Edward's Hospital Fund on the ordinary expenditure during 1912 of 109 London hospitals. The total ordinary expenditure of these hospitals (exclusive of improvements or other capital expenditure) amounted to £1,038,791, a sum very greatly in excess of their income from all sources (including legacies), and met only through the grants from the three great Hospital Funds. There is noticeable also a great increase in the cost per bed and per attendance in the out-patient departments, due in large part to the continual increase of special and costly treatments and in part to the rise of prices, and not necessarily to lack of attention to economy. The stoppage of repairing work in hospitals owing to the painters' strike, which has had the effect in one hospital of temporarily closing two wards, though undoubtedly a problem for the hospitals concerned, can hardly be classed as a hospital problem. The relation of the Insurance Act to hospital administration is a new problem that is causing difficulties in many directions, and will continue to do so in all probability for a considerable period until some method of adjusting them is found, as always occurs in similar circumstances when the pressure of the need becomes acute. It is, however, a national problem only; but besides the question of finance there are many problems also that affect every hospital as such in the world—problems of construction, of administration, of fitness for curative work, educational work, research work, even preventive work. The first issue of an interesting magazine entitled *The Modern Hospital*[1] should offer a good field for the discussion of all these matters, since it is described as "a monthly journal devoted to the building, equipment, and administration of hospitals, sanatoriums, and allied institutions, and to the medical, surgical, and nursing services." The editors are Dr. Henry M. Hurd and Dr. Winford H. Smith (Baltimore), Dr. Frederick A. Washburn (Boston), Dr. S. S. Goldwater and Dr. James G. Mumford (New York), Dr. W. L. Babcock (Detroit), and Dr. John A. Hornsby (Chicago), whose book "The Modern Hospital" was reviewed in our columns on July 12th, and called forth the highest encomiums for the wide knowledge shown of this complex branch of administrative medicine. This first issue, dated September, 1913, contains articles by Dr. A. J. Ochsner, Surgeon A. W. Dunbar, U.S.N., Dr. S. S. Goldwater, Dr. E. F. Stevens, Dr. James G. Mumford, Dr. Herbert B. Howard, Mr. Stewart Johnson (Great Ormond-street Children's Hospital, London), Dr. Theodore B. Sachs, Nurse Reba Shaeffer, and Dr. E. H. Skinner on such varied subjects as the Influence of Institutions in Reshaping Modern Society, the Modern Naval Hospital, the Passing of the Hospital Unit, a Comparison of the European and American Architecture and Equipment of the Surgical Unit, the Sanatorium, the Peter Bent Brigham Hospital, Boston, the Probable Effect of the Insurance Act on the Hospitals of the British Isles, the Admission of Tuberculosis Cases to General Hospitals, Social Service in Hospitals, and the Ownership of X Ray Plates. There are also reports of such papers and discussions as related to hospitals at the American Medical Association, the British Medical Association, the American Hospital Association, and the British Hospitals Association, with foreign correspondence, and reviews of books. A commendable feature is that the journal confines itself in all departments to matters bearing on its *raison d'être*. It is well illustrated and so catholic in character that it will doubtless commend itself to all those especially interested in the problems of whatever kind that affect the hospital. And these problems are undoubtedly multiplying, growing more urgent, and engaging the attention of an increasing number of persons year by year.

[1] The Modern Hospital. Editorial offices, Monroe Building, Chicago; business offices, Metropolitan Building, St. Louis. Foreign subscription 14s.

EPIDIDYMITIS DUE TO THE COLON BACILLUS.

IN the *American Journal of the Medical Sciences* for July Dr. W. S. Reynolds has reported a case of epididymitis due to a very unusual cause—infection with the colon bacillus. The patient was an unmarried man, aged 37 years, who suffered from frequency of micturition accompanied by pain and tenesmus. He never had had urethritis. On examination on May 7th, 1912, the second day, no inflammation of the meatus or urethra was found. Urine passed into two glasses was equally cloudy, in consequence of the presence of pus. Cystitis was diagnosed, and cathartics, hot rectal irrigations, and morphine suppositories at night and an alkaline diuretic were ordered. After a few days the symptoms subsided and the bladder was irrigated with boric solution. A specimen of the urine obtained after irrigation of the bladder showed many pus cells, epithelium which looked like that of the renal pelvis, and bacilli which by culture were proved to be colon bacilli. On the twelfth day he began to suffer from pain and tenderness in the left spermatic cord and epididymis with some return of the urinary symptoms. The application of a solution of lead and opium with an ice-bag and support of the testicle did not prevent the epididymis from becoming much enlarged and tender. The temperature ranged from 99° to 101° F. On May 23rd he had a severe chill which was not followed by any marked rise of temperature. Blood examination showed that the white corpuscles numbered 22,000, of which 87 per cent were polynuclears. A vaccine was prepared and 5,000,000 bacilli were injected. A chill and rise of temperature to 102·8° soon followed. An injection of the same number and one of 10,000,000 and 30,000,000 bacilli were

given at intervals and provoked only a slight or no reaction. The exudation into the epididymis was very slowly absorbed. The epididymitis was as severe as Dr. Reynolds has ever seen in gonorrhœa, and more prolonged than is usual in that disease. The vaccines did not seem to be of much benefit. The microscopic examination pointed to the existence of pyelitis. As the bacilli were present in urine which had not been allowed to remain any time in the bladder, it seemed that they were passing down from the kidney. They produced cystitis, and the inflammation evidently extended from the posterior urethra to the epididymis.

AUGUST AT HOME AND ABROAD.

THE weather of August was in many respects very similar to that of July both in this country and on the continent. In these islands the main current of wind was again from some point between north-west and north-east, and the temperature consequently higher in the western section of the country than elsewhere, although it was seldom very high anywhere, and the mean was generally below the August average. Considered generally, the weather was droughty, rain falling on very few days and usually in very small quantities. On the 30th and 31st, however, some heavy downpours which occurred in the south and south-west served to bring the aggregate to a figure not a great way below the normal in several localities. The absence of sunshine was again a noticeable feature of the weather in nearly all parts of this country, but the deficit was not quite so marked as in July. In the metropolitan district, as represented by the Kew Observatory, the total number of hours of bright sunshine was 141, or as many as 50 hours less than furnished by an average August, while a bright August will yield about 250 hours. In the Midlands the weather was less sunny than in London, the figure at Nottingham being only 125 hours, or 56 hours less than the average; but towards the south-west, at Bath, the figure increased to 162 hours, rather more than an hour per day below the normal; at Torquay the value was as high as 179 hours, and at Newquay 176 hours. These relatively high figures are, nevertheless, below the normal, an ordinary August giving about 220 hours. In the Channel Isles, where the sun has been so loth to show any face during the current year, there were 214 hours last month, but this figure is still below the normal, the average being 234 hours. As in July, the month afforded the unusual example of much cloud and very little rain. In the south-east of England, at Kew, rain fell on only 9 days, and yielded a total of 1·31 in. against an average of 2·36 in.; and in the south-west of England, at Torquay, only 8 days were at all rainy, giving a total of 1·53 in., against an average of 2·69 in. To illustrate the extreme dryness of the past few months it may be interesting to state that at Torquay between the dates May 19th and August 25th, 98 days, only 24 days have given as much as 0·01 in. of rain, and the total has been no more than 1·06 in. Several parts of the kingdom were drier than the metropolis. At Newquay the August rainfall was only 0·90 in., and at Jersey only 0·57 in., the latter figure being 1·86 in. less than the normal. At Bath and Nottingham the respective totals were 1·80 in. and 1·63 in., showing a deficit of an inch or rather more. The average temperature for August rules, over the kingdom generally, slightly lower than that for July, but last month formed an exception. Nearly everywhere the weather was warmer than July, and in a few places it was very little below the August average, while in a fewer still it was just a trifle above it. At Torquay the mean warmth of the month was 63·3°, nearly 2° above the normal, the mean maximum being 69·7° and the mean minimum 56·8°, the mean diurnal range being 12·9°. Along the northern coasts of Devon and Cornwall the days were cooler and the nights about as warm. At Ilfracombe the mean maximum was 65·7°, and the mean minimum 56·6°, while at Newquay the corresponding figures were 65·1° and 55·3°. In London the mean maximum equalled 69·1°—nearly a degree less than the normal—and the mean minimum 52·6°, or rather more than a degree less than the normal. Bath was a little warmer than London both during the day and night, and the midlands a little cooler, especially at night. Brighton, on the contrary, was cooler than London during the day, its mean maximum temperature being 67·3°. Its mean minimum was, however, as high as 54·4°. Bournemouth was warmer than Brighton during the daytime and cooler at night, its mean maximum reaching 70°, and its mean minimum being as low as 52·3°. Towards the north of England both the days and nights were cooler, Buxton having a mean maximum of 63·3° and a mean minimum of 47·5° and Harrogate 65° and 49·5°. The climate of Buxton must not, of course, be taken to represent the north of England generally. As it is nearly 1000 feet above the sea level it has a climate of its own. Very little really hot weather was experienced on the Continent except in Italy and other countries in about the same latitude. The greater part of France was only moderately warm for August, and occasionally very cool. At Paris the mean maximum temperature was no higher than 73·2° and the mean minimum 54·0°. On only four days did the thermometer exceed 80°, while on nine it failed to reach 70°. As in London rain fell on nine days, but the total was greater, amounting to 2·5 in. At Brussels the climate was both cooler and drier. On 15 days the maximum temperature was below 70° and on one occasion below 60°, but a few hot days towards the end of the month brought up the mean maximum to just over 70°. The mean minimum, 51·7°, was nearly a degree lower than at Kew. Rain fell on six days only and gave a total of no more than 1·12 in. Berlin, which was warmer than Paris during July, had a mean maximum no higher than 69·7°, just the same as at Torquay, and a mean minimum of 54·7°, about the same as Brighton. On 16 days the thermometer remained below 70° and exceeded 80° on only three. The total rainfall, divided between 11 days, reached 2·4 in.

THE PROBLEM OF THE TYPHOID CARRIER.

WHEN the relation between typhoid fever and a contaminated water-supply was demonstrated it was thought that by sanitary precautions the disease could be eliminated. But even in the best protected communities the disease still lingers, though in a greatly diminished extent. The discovery of typhoid carriers has furnished an explanation of this "residual typhoid fever." Many sanitarians believe that without carriers the continuance of the disease would be impossible. The problem of dealing with the typhoid carrier is exceedingly difficult. In the *Boston Medical and Surgical Journal* of July 10th it has been well discussed by Dr. C. L. Overlander. There is, as he points out, the initial difficulty of even detecting the carrier. Typhoid fever varies greatly in severity, and the symptoms may be so slight that the disease is unrecognised. Children are especially dangerous, as the disease in them is often mild and, being the recipients of caresses, they may easily communicate it. Carriers may be divided into three classes: 1. Those who have had recognised typhoid fever. 2. Those who have had an illness, caused by typhoid bacilli, which has not been recognised as typhoid fever. 3. Those who have become infected with typhoid bacilli but have developed no illness as a result. Even when the typhoid carrier is found the prevention of the

spread of infection from him is difficult. In the Boston City Hospital Dr. Overlander studied the problem of dealing with typhoid patients after their discharge. On an average they remained in hospital from two to three weeks after convalescence. In 23 per cent. of a series of 65 cases typhoid or paratyphoid bacilli were found in the stools or urine or in both. Thus nearly one-fourth of the patients were capable of propagating the disease. Moreover, there was no guarantee that some of the remaining 67 per cent. would not also become carriers. It is true that the percentage of chronic carriers (those who discharge bacilli 3 months or more after convalescence) is much lower than the figure given above. It has been estimated by different investigators at percentages varying from 1·5 to 6. There is no method by which it can be proved that a person is not a chronic carrier. Repeated examination of the stools and urine may be negative, but the bacilli may remain latent in the gall-bladder or other place for months and then appear in the stools in large numbers, perhaps owing to some change in the mode of life of their host, some change in diet causing the intestinal contents to become a favourable medium for the growth of the bacilli. In India, where much work has been done on typhoid carriers, as many as 75 successive daily negative examinations have been found to be followed by a positive one. It has been shown that urotropine will free the urine from typhoid bacilli, but no drug has been found which will free the gall-bladder or the intestinal tract. Anti-typhoid vaccines may possibly be of some use. Since the discovery that a proportion of all persons who recover from typhoid fever are carriers of the bacillus medical officers of health have endeavoured to discover some means of controlling them. Following the German example, convalescents have been detained in hospital until one or more negative findings were obtained from the stools and urine, but, as shown above, such negative findings are no guarantee that the patient is not a carrier. Dr. Overlander concludes that a plan much more easily carried out is the best: to regard all persons recovering from typhoid fever as potential carriers, and to carefully instruct them in the precautions they should adopt. Among these he mentions that they should be forbidden to handle food supplies. The systematic disinfection of the urine and fæces for some time after recovery from the disease should also be enjoined, as well as scrupulous cleanliness on the part of the patients and the use of antiseptics for their hands.

A NEW FORM OF FEVER IN THE PANAMA CANAL ZONE.

A PRELIMINARY note on a hitherto unrecognised six-day fever in the Panama Canal Zone has recently been published in the *Journal of the American Medical Association* by Dr. W. E. Deeks, chief of the Medical Clinic in the Ancon Hospital. This observer himself has treated some 20 cases of the disease in hospital, the first attacks having been noticed among the male clerks of the Ancon post office staff. From this circumstance it has been inferred that the infection in all probability was "imported by the mails from some infected port." The malady is thought to resemble one of the exanthemata, though there is no special eruption, but the disease has a well-defined onset and runs a recognised course. A number of the cases admitted to hospital had a miliary rash, but this is not constant. The temperature of the patient always becomes normal on the sixth day, and this can safely in all cases be predicted to the sufferer or his friends. The incubation period seems to be about ten days. No form of medication employed so far has succeeded in altering or modifying the progress of the attack; though some of the cases have been very severe there have been as yet no deaths attributed to the malady. From information received it appears that the infection is now spreading in the city of Panama. In describing the symptoms and discussing the diagnosis Dr. Deeks gives reasons for differentiating the new disease from malaria, dengue, and influenza, as well as from typhus, typhoid, and paratyphoid fevers. We notice that he makes no mention of the possibility of the malady being related in any way to an anomalous or irregular form of yellow fever, a malady at one time very prevalent upon the Isthmus of Panama. No doubt Dr. Deeks has sufficient reasons for disbelieving that any such relationship exists, but in a region where yellow fever, until the last few years, has prevailed with considerable severity, the occurrence of attacks characterised by vomiting and fever and showing traces of albumin in the urine might be viewed with some suspicion and deserve passing notice, even though the icteric tint of the skin was absent. Bacteriological investigations, conducted by Dr. S. T. Darling and Dr. H. C. Clark, with blood cultures, on different media, from a number of the cases at all stages of the affection, failed to discover any growth, and similar investigation of the stools and urine proved equally negative. Dr. Deeks is disposed to think that the disease is probably identical with the "seven-day fever" which has been described by Castellani and Chalmers in their "Manual of Tropical Medicine," and reported as occurring in some of the seaport towns of India and Ceylon. It will be interesting to observe if this recently recognised malady spreads more widely in Central America or gives evidence of establishing itself endemically in that region. Further reports upon the disease will probably be made by one or other of the members of the medical staff of the Isthmian Canal Commission, and no doubt Dr. Deeks, who is a keen and competent observer, will furnish us with more details regarding this hitherto undetected six-day fever of the Panama Canal Zone.

BY the retirement of Dr. Francis Warner from the post of senior physician the London Hospital loses the active service of one who has been connected with the institution for many years. He was appointed assistant physician and lecturer on botany in 1880, after a period of service as medical registrar, and became full physician in 1887 and lecturer on materia medica and therapeutics in 1890. Dr. Warner has been appointed on the consulting staff of the hospital.

THE MILK QUESTION.—The milk question has attracted much notice of late. Dr. W. Collingridge, in his last report as medical officer of health of the City of London, as the result of examinations of milk last year remarks on the prevalence of highly unsatisfactory conditions in the milk trade, and expresses his opinion that no improvement can be effected until farmers, dairymen, and others are forced by legislation to adopt more sanitary procedures. He urges that the analyst's certificate should by itself be considered evidence in regard to the Milk and Cream Regulations issued by the Local Government Board. There is also at the present time a great scarcity of milk as evidenced by the high prices recently obtaining per barn gallon on London railway platforms. Sir John Byers, of Belfast, has written to the *Times* commending the methods of the Danish Dairy Company, whereby some 24,000 bottles are filled, corked, and closed by cardboard discs bearing the company's name and a description of the type of milk in each bottle. Every precaution, medical, veterinary, chemical, and bacteriological, is taken to ensure the fullest purity of the milk. Milk is supplied under similar conditions in various cities of the United States.

DID NAPOLEON BONAPARTE SUFFER FROM HYPOPITUITARISM

(DYSTROPHIA ADIPOSO-GENITALIS) AT THE CLOSE OF HIS LIFE?[1]

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Dr. Arnold Chaplin[2] and Professor Arthur Keith[3] have recently thrown new light on the mysterious nature of Napoleon's last illness and the cause of his death. Dr. Chaplin's careful study of all the available documents has led him to confirm the official report that the actual cause of Napoleon's death was cancer of the stomach undiagnosed during life. He meets the difficulty of reconciling this condition with the long duration of Napoleon's illness—four and a half years—and with the nature of the early symptoms, by assuming that the illness commenced with ulceration of the stomach which ultimately became cancerous. He remarks that "the hepatitis theory which loomed so largely in the St. Helena records finds no support in any of the three descriptions of the appearance post mortem, and must be dismissed from the domains of practical considerations" (pp. 67, 68).

Professor Keith, on the other hand, maintains that the diagnosis of hepatitis upheld by all Napoleon's attendants, who were not biassed by political influences, was correct, and that the hepatitis and perihepatitis found after death were secondary to some form of Mediterranean fever or "undulant fever" endemic in the island of St. Helena. In support of his contention he cites the reports by Sir Frederic Eve and Mr. Shattock on the microscopic appearances of the specimens of intestines reputed to be those of Napoleon, which are now in the College Museum. The plaque-like growths in these specimens are not, he declares, "secondary growths of cancer" as they were originally held to be, but "inflamed hyperplastic enlarged patches of the lymphoid tissue which abounds in the lower part of the small intestine, and which is so often affected in general infection of the body."

I do not propose to criticise or discuss these views. There can be no doubt that Napoleon suffered from cancer of the stomach, and it is highly probable that he also suffered from hepatitis and perihepatitis following some sort of fever known to be endemic at St. Helena at the time. Professor Keith's conclusions are strongly supported by the morbid condition of the intestinal specimens which he asserts to be undoubtedly those of Napoleon. My purpose is to draw attention to another aspect of Napoleon's case which as far as I know has not hitherto been presented—namely, that towards the close of his life he suffered from *hypopituitarism*, and that at a much earlier period he showed indications of some form of *dyspituitarism*.

The signs by which hypopituitarism may be recognised are: (1) extreme and progressive obesity; (2) disappearance of hair on the body; (3) atrophy of the genitalia; (4) feminine appearance of the body, and of the pelvic region in particular; and (5) fineness in texture of the skin, and delicacy of the extremities. If we compare these physical signs with Henry's description of the appearance of Napoleon's body after death, they will be found to correspond in all particulars, and we may recognise Henry's description at once as that of a man suffering from hypopituitarism, or "dystrophia adiposo-genitalis."

Henry's account of the post-mortem examination has now been printed in full by Dr. Chaplin from the "Lowe Papers," where it is in the form of a letter to Sir Hudson Lowe and is dated Cavan, 1823. It contains the following observations, which seem to support the present writer's contention.

1. *Obesity.*—"The whole surface of the body was deeply covered with fat. Over the sternum, where generally the bone is very superficial, the fat was upwards of an inch deep, and an inch and a half or two inches on the abdomen."

2. *Alopecia.*—"There was scarcely any hair on the body, and that of the head was thin, fine, and silky."

3. *Atrophy of genitalia.*—"The penis and testicles were very small, and the whole genital system seemed to exhibit a physical cause for the absence of sexual desire and chastity which had been stated to have characterised the deceased." It will be observed that Henry's comment is hardly in accordance with what is known of Napoleon's private life when in his prime, but it is in keeping with the opinion that in his latter days he probably became impotent in consequence of hypopituitarism.

4. *Feminine characteristics of the body.*—"The skin was noticed to be very white and delicate, as were the hands and arms. Indeed, the whole body was slender and effeminate. ..... The pubis much resembled the 'mons veneris' in women. The muscles of the chest were small, the shoulders were narrow, and the hips wide."

These physical signs seem amply sufficient to justify the diagnosis of hypopituitarism, and we may next inquire whether any of Napoleon's symptoms were in accordance with this diagnosis, and if so, what was their duration. The main symptoms of hypopituitarism occurring in an adult are difficult to identify, as the condition is often associated with the indirect result of pressure by a tumour on the surrounding brain. But they seem to be in chief: (1) Psychical or mental in the shape of changes in temperament, apathy, indolence, irritability, loss of memory, and sometimes of self-respect or even of decency; (2) readily induced fatigue and prostration; (3) headache, vertigo, vomiting, and constipation; (4) fainting fits or actual epileptic seizures, followed by slow pulse, somnolence or stupor; (5) lowering of bodily temperature, sensations of chilliness, and sometimes œdema of the extremities.

Napoleon's Mental Faculties at St. Helena.

It is agreed even by his most ardent admirers that Napoleon's mental balance was shaken after the campaigns of Austerlitz, Jena, and Friedland; that the cool and calculating faculties on which his success in earlier life depended deserted him, and were replaced by rashness, grandiose ideas, and unlimited ambition. He admitted himself at St. Helena that the failure to make peace during the Congress at Châtillon in June, 1814, was "une lourde sottise."[4]

But it is generally maintained that, although his powers of judgment may have forsaken him, his intellect and mental faculties were unabated. Any statement to the contrary may perhaps meet with indignant protest, for glamour always surrounds the "man who was," and the sympathy and compassion which all must extend to a fallen star may lead us to exaggerate its brilliance and to ignore the evidence of its extinction. Dispassionate students of Napoleon's life in exile must fail, however, to be impressed by the examples of his literary productions which have been cited in proof that his genius remained unimpaired. In truth, his elaborate and detailed study of incidents in the "Siege of Troy" seems but a juvenile achievement. It was no mere *jeu d'esprit* but a solemn and ponderous attempt to demolish and disprove stories of a purely legendary order. A vestige of the sense of humour and of proportion should have told him that he might as well have occupied himself in discussing the strategy employed in "The Battle of the Frogs and Mice." Again, one has been called upon to admire his "Essay on Suicide" as the fruit of a mature philosophy; yet candour compels one to admit that it contains no spark of genius nor even originality. The best that can be said for it is that for naïve and complacent correctness of thought and style it might win a prize in some provincial academy. We cannot forget, moreover, that certain grand and dignified utterances attributed to Napoleon at St. Helena were edited and embellished by Las Cases, the journalist, no doubt, as he wrote in his diary, "in order to excite a lively interest in a large portion of the population of Europe."

It is pitiful to trace the mental decadence of this intellectual giant in the sordid details of his closing years. His puerile sulks and fits of temper, his vain insistence on a barren title, his ungracious reception of Lowe's attempts to alleviate his lot, his condescension to act the part of potentate in a court of obsequious Montholons, Bertrand and his silly wife, and Gourgaud the dullard, are significant enough. Perhaps the saddest indication of his mental decay is that Napoleon became a bore, as may be gathered from the description of his reading aloud to his companions night after night the tragedy of "Zaire," and sternly rebuking poor Madame de Montholon when she fell asleep. Napoleon, in fact, degenerated during the last five years of his life into a peevish,

[1] A paper read before the Historical Section of the Seventeenth International Congress of Medicine on August 8th, 1913.

[2] The Illness and Death of Napoleon Bonaparte, by Arnold Chaplin, M.D. London: Hirschfield Brothers, Limited. 1913.

[3] History and Nature of the Napoleonic Specimens in the Museum of the Royal College of Surgeons, England, by Professor Arthur Keith, THE LANCET, Jan. 18th, 1913, p. 187.

[4] J. Holland Rose: The Personality of Napoleon, Lowell Lectures.

querulous, and prematurely aged man. It is difficult to attribute his deterioration to circumstances, to the climate of St. Helena, or to hepatitis, ulcer or cancer of the stomach, or to "a form of undulant fever." None of these conditions is associated with mental enfeeblement, nor with the loss of self-respect implied in Arnott's statement that "he found the room and the bed-linen in a dirty state, for Napoleon had been allowed to expectorate anywhere at will."[5] Some other explanation of his mental and physical decay is needed, and the theory that he suffered from gradual hypophyseal insufficiency seems to meet the case, and is in accordance with the appearance of the body after death.

Decline of Physical Energy.

A day of Napoleon's life at Elba is thus described by Sir Neil Campbell:—

> After being yesterday on foot in the heat of the sun from 5 A.M. to 3 P.M. visiting the frigates and transports, he rode on horseback for three hours, as he told me afterwards, "pour se défatiguer."

But Napoleon's restless and untiring energy at Elba were soon replaced by sloth and lassitude at St. Helena. At first we hear of his walking, driving, and exploring the island on horseback, but by degrees, during the first two years of exile, he abandoned horse-riding, and, indeed, every form of exercise. The accepted explanation is that he did so out of pique at the restrictions imposed upon him in consequence of his well-known escapade in evading his attendants and galloping out of bounds. It seems more probable, however, that he ceased to take exercise because he no longer felt the need "pour se défatiguer." Fatigue and prostration readily induced by exertion were, in fact, signs of the insidious onset of hypopituitarism. From July, 1818, to September, 1820, Dr. Chaplin says that Napoleon was not seen by any medical man, only vague rumours of his failing health were heard. But Montholon states that Napoleon spent the greater part of the day indolently, with frequent recourse to hot baths in which he remained for hours at a time. Now the climate of St. Helena is not cold, and this curious habit of Napoleon may have proceeded from the sense of general chilliness to which the subjects of hypopituitarism are liable. In the later stages of his illness several references are made to the icy coldness of the extremities.[6]

Obesity.—Napoleon was always inclined to stoutness, and comments were made on his increasing corpulence by most of his attendants. It was not unnaturally ascribed to laziness and want of exercise by those who maintained that he was only suffering from hypochondriasis, and it was certainly difficult to reconcile absence of wasting with the existence of any serious form of hepatitis.

Napoleon's last illness undoubtedly puzzled all who attended him, and it is unfair to charge them either with culpable ignorance or, worse still, with gross professional dishonesty. The *dénoûment* came as a surprise to all, because the symptoms of ulcer, cancer of the stomach, hepatitis, and "undulant fever" were atypical. They were masked by "dystrophia adiposo-genitalis," a condition which could not be recognised at the time, as the functions of the hypophysis cerebri and of other ductless glands remained unknown.

Napoleon endeavoured to combat his increasing lassitude with some success, for between October, 1819, and July, 1820, he was out of doors engaged in gardening nearly every day, and in May, 1820, he resumed exercise on horseback. But after and during September, 1820, fatigue after the slightest exertion became pronounced, and frequent fits of lethargy were noticed. On Oct. 4th he took his last ride in public, but was so tired that he had to come home in his carriage.

Carriage exercise and short walks were all that could be attempted, and even these taxed his strength severely. Dr. Chaplin considers that up to October, 1820, indifferent health would have been a correct description of the condition of Napoleon; but that at that time a sudden declension took place, and thenceforth to the end he was dangerously ill. "Something had happened which rapidly sapped the strength and produced symptoms of gastric disorder far more acute than those which had been endured for three years." He attributes the exacerbation of pain, vomiting, weakness, and prostration to the development of a rapidly growing cancer in the lips of a chronic ulcer of the stomach. It is easy to construe the symptoms in the light of the post-mortem examination, but it must have been difficult to do so during life. It is inconceivable that Arnott, eight days before Napoleon became moribund, could have assured the British authorities that there was no danger and that the disease was merely hypochondriasis, had not the symptoms been obscured by the mental and physical deterioration which, as is now contended, were the result of hypopituitarism.

The Nature of Napoleon's Cerebral Seizures and the Cause of his Bradycardia and Frequency of Micturition.

There were certain conditions of medical interest connected with Napoleon's health which Dr. Chaplin thinks have been thrust into undue prominence by historians. In the present writer's opinion, however, they are of considerable importance as evidence that during the greater part of his life Napoleon was subject to some form of dyspituitarism which ended, as already maintained, in hypopituitarism. These conditions were (1) an habitually slow pulse which, according to Corvisart and others, rarely beat above 50 per minute; (2) a liability to "occasional attacks of vomiting followed by a state of lethargy, and stupor almost amounting to unconsciousness"; (3) habitual frequency of micturition ending in dysuria.

Napoleon's cerebral attacks occurred generally after prolonged physical exertion and mental strain, and outbursts of temper preceded them on more than one occasion. A particularly bad one is mentioned after the fatigue and disappointment consequent on the battle of Aspern.[7] If we may believe the statements of women whose society he frequented, such attacks were wont to follow sexual intercourse. At St. Helena the attacks seemed to have changed in character, for we learn that on Jan. 17th, 1819, Napoleon had a serious attack of vertigo followed by fainting, which appeared so grave that measures were taken to summon medical aid at once. The vertigo and faintness, which occurred more than once, were succeeded by headache. Stokoe, who was called in, apprehended apoplexy, but was evidently mystified, for, as Baxter subsequently pointed out, he recommended "a more nourishing diet instead of bloodletting." "A nourishing diet," Baxter said, "generally means animal food and wine. Such articles ordered for a patient who is considered to be in danger of a determination of blood to the head would convey suspicion either of the sincerity or professional talents of Mr. Stokoe." No doubt Stokoe was at a loss to explain the symptoms, and was guided rather by the evident prostration and weakness of Napoleon than by the rules of practice in cases of "threatened apoplexy."

I do not know any references to similar attacks of headache, fainting, and vertigo, but mention is frequently made of fits of lethargy, somnolence, and vomiting during Napoleon's last illness. It is impossible to say whether the vomiting was due to local gastric disease, or was of cerebral origin as seems to have been the case in earlier life. The habitual slowness of pulse seems to have been replaced by undue frequency at St. Helena, and complaint was made of palpitation and cardiac irregularity.

Dr. Chaplin rejects with some warmth the statement often made that Napoleon was epileptic. "Gusts of passion and severe vomiting followed by lethargy," he says, "are poor facts on which to brand a man with the stigma of epilepsy." It is true that there is no evidence that Napoleon ever suffered from a genuine fit of epilepsy, yet it must be admitted that the attacks of vomiting followed by "stupor verging on unconsciousness" set up by passion, excitement, and fatigue were certainly of cerebral or epileptiform nature.

Cushing has recently drawn attention to the frequency of epileptiform tendencies in the subjects of pituitary disease. Thirteen out of 18 cases showed these tendencies. Some had definite epilepsy associated with loss of smell, or olfactory or gustatory aurae. In other cases the attacks were those of unconsciousness unattended by convulsions and followed by stupor. Sometimes there were attacks of semi-unconsciousness with slow pulse and low blood pressure, or dizzy spells, headache, mental confusion, and loss of memory lasting 20 minutes. He also alludes to types of epilepsy often accompanied by an extreme lowering of temperature and slowing of pulse occurring in obese subjects with ravenous

[5] Lowe Papers, vol. xx., 157, f. 3.

[6] Œdema of the feet was noticed for the first time in October, 1816, and again in September, 1817. (Chaplin, p. 13, op. cit.)

[7] Allison: History of Europe, vol. xvii., p. 40.

appetites. Such epileptics, he says, are relieved by pituitary extract, and their attacks resemble those of patients suffering from demonstrable hypopituitarism. Cushing considers that the number of his cases showing epileptic tendencies—13 out of 18—is so large that the association cannot be regarded as merely coincidental. He suggests that a possible predisposition to cortical instability exists as a consequence of hypophyseal insufficiency.

Dr. Chaplin mentions that "in recent days the exponents of the new cardiac pathology have regarded the slow pulse and the attacks of stupor verging on unconsciousness as indications that Napoleon suffered from partial or complete "heart block." But complete or partial heart block is a grave condition; there is no evidence that his attacks—with the exception of the one at St. Helena—gave rise to any alarm, nor that he was in any way the worse for them. It seems, on the whole, more probable that Napoleon's bradycardia and liability to curious cerebral symptoms were caused by some abnormality of his hypophyseal secretion.

Hypersecretion or hyposecretion?—It is not easy to decide how far Napoleon's dyspituitarism was in the direction of excess or defect of pituitary secretion. The well-known physiological action of pituitary extract is to slow the pulse, raise blood pressure in general, and that of the cerebral circulation in particular. It may therefore be that Napoleon's habitual bradycardia was due to hypersecretion, and that his attacks of vomiting, followed by signs of cerebral exhaustion caused by fatigue or excitement, were the result of temporary cerebral anæmia, which in turn depended on some vascular cerebral disturbance. Pituitary extract is also a powerful diuretic, and this suggests a possible explanation of the *urinary* trouble from which Napoleon told Antommarchi he had suffered all his life.

Now, Ségur says that after the battle of Borodino Napoleon had an aggravation of his habitual complaint "dysuria," and that the condition became so bad that riding caused considerable pain.[a] But Napoleon also told Antommarchi that irritability of the bladder would not permit him to sleep for more than a few hours at a time, and that he had *always experienced this trouble*. Since Antommarchi found at the post-mortem examination small calculi in the bladder and the coats of that organ diseased, there can be no doubt that cystitis was the cause of the painful strangury and frequent desire to micturate in later life. But it is impossible that this condition of cystitis should have existed throughout Napoleon's existence. It is far more probable that it came as an aggravation of a constitutional peculiarity—namely, polyuria and frequency of micturition due to hyperpituitarism—and that Napoleon and his medical advisers confused this peculiarity with the symptoms of cystitis which ultimately occurred.

Napoleon's Sexual Life.

Henry, seemingly a follower of Gall and Spurzheim, notes the "strong development of the organ of philoprogenitiveness" in Napoleon's cranium. He then with curious inconsistency remarks on the appearance of "the whole genitive system which seemed to exhibit a physical cause for the absence of sexual desire and the chastity which had been stated to have characterised the deceased."

In spite of inconsistency, his observations are not devoid of interest. Napoleon, whether "philoprogenitive" or not, seems to have been liable to sudden and vehement sexual impulses. If anecdotes are to be believed, these impulses beset him on occasions which were sometimes inconvenient, and a peculiarity about them was that they subsided with equal suddenness if not immediately gratified, or if meanwhile something occurred to disengage his attention. All women were to him but *filles de joie*. Sexual rather than social attractions in women appealed to him, and he was incapable of lasting affection for any woman, or of regarding her as an intellectual equal and helpmate. The best women, in his opinion, were those who bore most children. Sexual gratification was the only kind of love he knew, and his remarks on the subject when at St. Helena must be taken as those of a man whose desire had failed, not as the mature reflections of a philosopher. It is true that scandals were afoot in regard to his sexual life while in exile, but these seem to have been unfounded, and there is no reason either for doubting the chastity—during this period at least—to which Henry referred, or the physical cause to which he attributed it.

It is possible that Napoleon's abnormal "libido sexualis" was due to hyperpituitarism. For gigantism in early life is sometimes associated with precocious sexual development, and abnormal sexual activity may be a sign of early acromegaly. Cushing's first case is that of a man whom he describes as a "veritable Gargantua" at the age of 35. At 19 he measured 6 feet 4 inches, and was of unusual strength. "He was intelligent, a good student, and aside from an uncontrolled 'libido sexualis' had good habits." At 25 there were no signs of acromegaly, but they appeared at the age of 27. At 35 his height was 6 ft. 6 in., he was typically acromegalic, and had lost "libido et potentia sexualis."

The association of atrophy of the genital organs with lesions of the pituitary has led some authorities (Tandler, Gross, and others) to attribute the primary cause of the pituitary affection to the atrophy of the genital glands. But although changes are produced in the pituitary by castration, the physical results of castration do not resemble dystrophia adiposo-genitalis, and it is much more likely, as Blair Bell maintains, that this condition is subsequent to a pituitary lesion.

The Part or Parts of the Hypophysis Cerebri which were probably concerned in the Causation of Napoleon's Dyspituitarism.

As the head was not opened after death the condition of the hypophysis cerebri must remain for ever unknown. But modern investigations of the functions of the different portions of the pituitary gland suggest conclusions as to those portions which were probably affected in the case of Napoleon. Although authorities are by no means agreed in the matter, it seems to be fairly well established that the *pars anterior*, or glandular portion, is chiefly concerned in regulating skeletal growth, sexual activity, and temperature. Whereas the *posterior part*, or pars nervosa, which includes the pars intermedia, is more closely allied to metabolic processes and especially to the metabolism of sugar, "and also probably serves to promote contractility and tone of plain muscular tissues generally, as well as of the heart, and to excite the activity of certain glands—viz., the kidney and mammary gland." (Schaefer.)

Gigantism in early life and acromegaly in later life are regarded as indications of hyperpituitarism on the part of the anterior lobe. Keith supposes that in such cases the organ supplies "hormones" which render osteoblasts more sensitive to mechanical and other stimuli. Hitherto it has not been found possible to produce hyperpituitarism in the shape of gigantism or acromegaly experimentally. Clinical evidence in favour of the view that acromegaly is due to hyperpituitarism is that in some cases during pregnancy, when the gland is known to become enlarged, transient signs of acromegaly have been observed. But the theory is mainly an inference drawn from the fact that experimental hypopituitarism (partial extirpation of the anterior lobe) causes "acromegaly reversed," i.e., shortening of the skull, and diminution in the size of the limbs (Crowe, Cushing, and Homans). The other effects of experimental hypopituitarism are atrophy or ill-development of the genitalia, loss of sexual hair, feminine characteristics of the pelvis and skin in males, obesity, and lowered temperature.

The influence of the anterior lobe on temperature is shown by the *thermic reaction* which is produced by injection of anterior lobe extract in cases of definite hypopituitarism. In normal individuals, however, no such thermic reaction takes place. Cushing explains the paradox that gigantism and acromegaly are often, if not usually, associated with dystrophia adiposo-genitalis, by supposing that the exit of the secretion of the posterior lobe into the third ventricle through the infundibulum is blocked by a tumour. He finds that adiposity may attend tumours of either anterior or posterior lobe. Hypopituitarism of the posterior lobe is also indicated by diminished metabolism, diminished consumption of oxygen and lessened output of CO_2, and a high degree of tolerance of sugar, which is turned into fat and stored in that form in the tissues, thus accounting for the obesity.

The functions of the *pars intermedia* are far from being decided. They are probably not the same throughout life. In childhood the cleft between the anterior and posterior lobes is wider than in later life. Erdheim and Thom have

[a] Ségur: La Campagne de Russie, ed. Nelson p. 124.

described changes which occur in the hypophysis at about the age of 40, "when the basophil cells of the pars anterior are seen to bridge over, generally at three or four points simultaneously, the cleft between the anterior lobe and the 'pars intermedia,' and thence to invade the 'pars posterior.' It is about this time, too, that small adenomata are frequently met with, while before that time they are rare."[9] In the child, moreover, the cells of the anterior part contain less glycogen, and those of the posterior part less pigment than in the adult. During pregnancy, again, certain changes take place in the cells of the gland. "The eosinophilia disappears and a large portion of the cells of the pars anterior becomes chromophobe and ..... have been called 'pregnancy cells.'"[10]

The histological and structural changes, therefore, which have been observed in the hypophysis at different life stages may perhaps be taken to imply that in early life the anterior and posterior lobes have independent functions, whereas in later life the organ—as Blair Bell maintains—acts as a whole. The "bridging over" of the pars intermedia by basophil cells passing from the pars anterior towards mid-life is in favour of Blair Bell's contention. It is impossible, however, at the present time to decide the question one way or another. Cushing's supposition, that the paradoxical association of gigantism and acromegaly with dystrophia adiposo-genitalis is due to blockage of the infundibulum, may be correct in some cases. But his simpler explanation is that hyperpituitarism in time gives way to hypopituitarism, the osseous and tissue changes of the former remaining permanent whilst the changes of the latter are superadded.

Swale Vincent considers that the thyroid, parathyroids, and pars intermedia of the hypophysis may form one apparatus. But there seems to be a far wider correlation between the hypophysis and other ductless glands, which renders the whole question of their individual functions and influence over each other, one of the greatest difficulty. Cushing found that extirpation of the whole of the pituitary gland or the whole of its anterior portion caused death in a short time. Biedl has stated that the posterior lobe (pars intermedia and pars nervosa) may be removed without producing symptoms.[11]

Returning to the case of Napoleon, it is hardly necessary to state that he suffered neither from gigantism nor acromegaly. "The features," Henry said, "were regular and might be considered beautiful," and this is borne out by the cast of the face taken after death. He described the head as being of large size, "which must have been disproportionate to the body even in youth. The forehead was very broad and full." But Antommarchi's measurements show that the maximum circumference of the head—20 pouces 10 lignes (old French) or 22·5 inches—was not above the average. The apparent disproportion was probably due to the large size of the face and the powerful lower jaw which characterised Napoleon. But the mandibular prognathism of acromegaly was absent, and the only signs of acromegaly which may be detected in Henry's description were the width of the hips and general feminine appearance of the pelvic regions, which are in keeping with the pelvic characters observed in male acromegalic subjects by von Bonin, Lannois, Roy, and shown, as von Bonin states, in illustrations of cases recorded by Buday, Thomson, and others. Cushing has drawn attention to the "maxillary prognathism" noticeable in subjects of hypopituitarism, and contrasts it with the "mandibular prognathism" of acromegaly. Cushing's photographs illustrating "maxillary prognathism" have a marked likeness to each other, and some may detect a resemblance between these subjects of hypopituitarism and the portraits of Napoleon in his later years.

As regards the nature of the lesion in Napoleon's case, it is hardly likely to have been a tumour, because there is no evidence that the optic commissure was involved or that vision was in any way affected. But the presence of a tumour is not essential for the production of gigantism, acromegaly, and dystrophia adiposo-genitalis. All these conditions may occur singly or combined, as the result of excess, defect, or alteration of the functions of the component parts of the pituitary body.

In conclusion, we have evidence that Napoleon towards the close of his life suffered from hypopituitarism of the anterior lobe in the shape of genital atrophy, sexual alopecia, skeletal and tissue changes of feminine type, and lowered temperature. Hypopituitarism of the posterior lobe was, perhaps, indicated by obesity and lowered metabolism. How far his gradual failure of mental and physical energy was attributable to hypopituitarism on the part of the anterior or posterior lobes or of the organ as a whole must be left undetermined.

In regard to evidence of hyperpituitarism in Napoleon up to the zenith of his career one is on less sure ground. One can only adduce the habitual slowness of pulse, the life-long frequency of micturition, the "libido sexualis," and the anomalous cerebral attacks to which he was liable, as evidence of some form of dyspituitarism.

Time is not yet ripe for drawing any sweeping conclusions as to the importance of our ductless glands, but knowledge grows apace, and physiologists may in future come to regard not only our physical and sexual development, but also our mental, moral, and intellectual faculties as measures of the activity of our glandular secretions.

Upper Berkeley-street, W.

[9] Gerhardt von Bonin: Study of a Case of Dyspituitarism, Quarterly Journal of Medicine, January, 1913.

[10] Blair Bell: Arris and Gale Lectures, THE LANCET, April 5th, 1913, p. 940.

[11] Blair Bell: Op. cit.

SUGGESTED INTERNATIONAL TEST FOR DISINFECTANTS.

BY S. RIDEAL, D.Sc., F.I.C.

IN order that the actual germicidal power of commercial disinfectants may be successfully controlled the necessity for the universal adoption of one standard method of testing is now fully recognised; although the Rideal-Walker carbolic acid coefficient test is extensively used, a great number of modifications have been suggested since the publication of the original method in 1903.[1] The most recent modifications have been put forward by Anderson and McClintic of the United States Hygienic Laboratory.[2] The work of these investigators is rendered all the more valuable by the results published of extensive actual tests they have carried out with the various processes step by step. Many of their results are confirmatory of those published in the original method, such as the necessity for the employment of a well defined test organism, a standard temperature of disinfection, a definite proportion of test culture to disinfectant, and a standard subculture medium.

While adopting the main outlines of the Rideal-Walker test, Anderson and McClintic have incorporated several alterations suggested by THE LANCET Commission modified process[3]—in fact, their new test lies midway between the original Rideal-Walker method and THE LANCET modification, the only novelties being the use of a graduated pipette to measure the dose of test culture added to each dilution of the disinfectants and the carrying over of the test culture every 24 hours on at least three successive days before beginning a test. The authors adopt THE LANCET suggestion of taking as the final result the mean of two figures obtained after a minimum disinfectant period and a maximum disinfectant period, while they keep to the original 15 minutes and discard the long period of 30 minutes taken by THE LANCET for the maximum time of disinfection. To some extent the same criticism is applicable to the new method as has been made of THE LANCET method, that the whole test may be too cumbersome for every-day commercial use. The number of carbolic-acid-control dilutions is increased from the original one (or possibly two) up to at least four, and a correspondingly greater number of dilutions of the disinfectant being tested are necessary, resulting in as many as 76 subcultures for a single test, as shown in their paper; it is clear that all these subcultures were actually made in the 15 minutes, since 76 plus and minus signs are given in their chart. The Rideal-Walker test requires 30 subcultures.

To decide if any advantage is gained by such elaboration of the process is a complex problem. Each modification

[1] Journal of the Royal Sanitary Institute, London, 1903, p. 424.

[2] United States Hygienic Laboratory, Bulletin No. 82, p. 1.

[3] THE LANCET, Nov. 13th (p. 1454) and 20th (p. 1516), 1909.

of the Rideal-Walker test brought forward from time to time introduces an entirely fresh set of carbolic acid values, without any reference to the Rideal-Walker coefficients of the actual samples of the disinfectants examined. As already mentioned, a great deal of practical work has been done by Anderson and McClintic, and the latter has published the results obtained by their new method for a number of disinfectants,[4] mainly proprietary preparations sold in the United States, yielding quite low carbolic acid values. In the following table a few of McClintic's results are compared with the ordinary Rideal-Walker coefficient where the latter has been obtainable from various sources for the same disinfectant preparation. It should be noted that these first two columns of results are not obtained from identical samples or even the same batch of disinfectant; the Rideal-Walker figure for "Phenoco" is that guaranteed on the bottle. In the third column are calculated results to be referred to later.

—	Rideal-Walker carbolic acid coefficient (various observers).	Anderson-McClintic modification (McClintic).	Rideal-Walker coefficient at 7½ minutes from McClintic's tables.
Phenoco	17·0	15·0	15·0
Creolin Pearson ...	2·7	3·2	3·4
Liquor cresolis compositus (United States Pharmacopœia)	2·5	3·0	3·0
Lysol	1·7	2·1	2·1
Formalin	0·3	(0·3 W. Dreyfus)	No table published.
Listerine	0·03	Too small to be determined.	—
Antozone	0·02	,,	—

As would be expected, the Anderson and McClintic values show generally a slight increase for moderate disinfectants and a slight decrease for the more powerful germicides over the Rideal-Walker coefficients. However, the valuation or classing of these seven widely divergent disinfectants by the Anderson and McClintic modification or by the more easily attained Rideal-Walker coefficient is practically the same.

Among all the 54 disinfectants tested by McClintic only two comparatively high values are given—viz., 12·3 and 15. The published test-chart for one of these cannot be considered satisfactory; it is stated in the introduction to the report (p. 36) that "in determining the coefficient of a disinfectant from two to five experiments were performed, and the experiment whose coefficient approximated the general average of all the coefficients determined was selected for report." As a rule high values are more difficult to determine than low ones. A large number of disinfectants employed, at any rate by the English authorities, have coefficients nearer 20 than 10, and if this is the best result obtained from five performances of Anderson and McClintic's lengthy test it certainly will not recommend this method to those who have to pay the cost and wait for the result. Anderson and McClintic find (p. 5) that THE LANCET modification upon which their own test is mainly based is "not as simple or as easily performed as the Rideal-Walker method." In the same report they state (p. 7) regarding the Rideal-Walker test, "A certain amount of dexterity which can only be obtained by practice is always necessary for carrying out the tests. The great objection to the method, however, and it is almost a vital one, is the latitude allowed in determining the coefficient." While all are ready to accept modifications that will aid the universal adoption of one standard method, it is to be feared that more complications, however true their scientific value, will not promote this end; a standard test is required to *control* the perhaps daily output of disinfectants and not simply to determine once and for all the bactericidal value of definite substances. Cannot Anderson and McClintic's chief objection to the Rideal-Walker test, the latitude allowed in calculating the coefficient, be met by employing a fixed time-limit as originally suggested by Chick and Martin?[5] This has been adopted with apparently good results in a paper recently published by E. A. Cooper on the bactericidal action of the cresols and allied bodies and the best means of employing them.[6] As a matter of fact, operators usually aim at reactions for 5–10 minutes with the Rideal-Walker test, and would reject such extreme ranges as those cited by Anderson and McClintic. The excellent suggestion by these authors of a fixed temperature for the disinfection in place of the range of 15° to 18° C. originally put forward would, one believes, find general acceptance, and, as they recommend, this could be defined as 20° C. to suit most climates. Their further proposition as to the preliminary repeated subculturing of the test organism is doubtless necessary, especially in the case of laboratories not frequently carrying out such tests; this should not cause delay, as the preliminary cultures would be employed for bringing the dilutions of the unknown disinfectant within range. Also, their minor modification, the employment of a graduated pipette for the measurement of the dose of test culture to each dilution of the disinfectant, appears an improvement and would, one hopes, be readily accepted.

These, at present controversial, points in the proposed universal standard method of determining the bactericidal power of commercial disinfectants could then be summarily put as follows: (1) organism B. typhosus; (2) test culture—subcultured and filtered (as recommended by Anderson and McClintic); (3) temperature of disinfection 20° C. (Anderson and McClintic but using R.-W. standard broth); (4) dose of test culture to disinfectant 0·1 c.c. per 5 c.c. measured from a graduated pipette (Anderson and McClintic); and (5) calculation of result—from an empirical time (yet to be fixed) within the 15 minutes' duration of the test (as recommended by Chick and Martin).

Only one standard platinum loop would be required for subculturing both the carbolic acid control and the disinfectant dilutions, thus minimising the error due to the use of the four to six separate loops required by the Anderson and McClintic modification, as the test would then in all probability be even simpler than the original Rideal-Walker method, and certainly far less complicated and laborious than THE LANCET or Anderson and McClintic modifications. In the third column of the table already given results are shown similar to those which would be obtained by such a standard test, the only difference being the use of six platinum loops employed by McClintic. For this purpose sterility between 5 and 7½ minutes has been taken as the fixed time for each calculation which has been made from the corresponding Anderson and McClintic test-chart obtained and reported by McClintic. It will be seen that the results agree closely with McClintic's figures in the second column: with over 50 different disinfectants that McClintic reports the greatest divergence is only 0·48—viz., "Hycol" reported as 12·3, the calculated result being 12·78. The latter could be confirmed by two separate tests with less labour than is required for one of the Anderson and McClintic's determinations.

No attempt has been made to discuss tests with organic matter as the subject is already somewhat intricate, especially to those not immediately familiar with the technique of the various tests; and, moreover, this cannot be adequately dealt with until a standard test for germicidal value is accepted.

Chemical Laboratory, 28, Victoria-street, Westminster, S.W.

[4] United States Hygienic Laboratory, Bulletin No. 82, p. 11.

[5] Journal of Hygiene, London, vol. viii., No. 5.

[6] Brit. Med. Jour., June, 1912.

ANNUAL REPORT OF THE INSPECTORS OF LUNATICS (IRELAND) FOR THE YEAR 1912.

WITH the exception of those wandering at large or residing in private dwellings there were 21,158 insane persons in establishments at the beginning of this year, the total increase during the year being 184. The increase for 1912 was, however, 118 less than the average increase for the preceding ten years. An increase took place in the numbers in district and auxiliary asylums as well as in the single patients in unlicensed houses, while the number in private asylums, in Dundrum Asylum, and in

workhouses decreased. The inspectors draw attention to the general report of the Commissioners for the Census of 1911, from which it would appear that the number of lunatics and idiots in Ireland as returned on the Census forms was 28,437 as compared with 25,050 in 1901, showing an increase of 3387, or 13·5 per cent. There has been an increase for each Census year as compared with the preceding, and the number returned at the last Census was nearly three times that returned for 1851. The lunatics and idiots as returned in 1911 are represented by a ratio of 1 in every 154 of the total population, as against 1 in 178 in 1901, 1 in 222 in 1891, 1 in 281 in 1881, 1 in 328 in 1871, and 1 in every 411 of the population in 1861. In 1851 the ratio was 1 in every 657 of the population. The number of the insane under care has increased from 250 per 100,000 of the population in 1880 to 567 per 100,000 in 1912. The population of the asylums has further augmented out of all proportion to the general increase in the numbers of the insane. Thus for every hundred asylum patients in 1861 there were 435 in 1911, or above four times as many, whereas the total insane have little more than doubled during the same period. The inspectors are of opinion that so far as this is not due to mere accumulation, it is to be explained by the decrease in the number of the insane in workhouses and the decrease of the number of cases at large. Many of the first admissions from workhouses into asylums are cases of senile mental infirmity, and represent the senility of a period when the population was larger than at present, so that there is reason to anticipate a further reduction in the first admission rate as time goes on. The first admission rate has, in fact, declined during recent years and is still declining. The total number of patients discharged during the year was 1803; of these, 1414 were discharged recovered, giving a percentage of recoveries on the admissions of 40·3. The number of deaths during the year was 1424, the rate on the daily average resident being 6·8. Necropsies were only held in 167 cases, and in five asylums none were made. We notice again and again that the inspectors report further accommodation to be required for the satisfactory housing of the patients in various asylums.

THE INTERNATIONAL DENTAL FEDERATION.

THE annual meeting of the International Dental Federation was held at The Hague from August 27th to 29th, and was well attended by the delegates representing the 23 countries of the Federation.

Mr. W. B. PATERSON (London) presided, and outlined in his address the arrangements for the Sixth International Dental Congress to be held in London in August, 1914, of which Congress the King had consented, he said, to be patron. He also stated that the Foreign Office had invited official delegates from all the principal countries of the world to attend the Congress, and the Colonial Office had done the same for the self-governing dominions of the British Empire.

Dr. C. VAN DER HOEVEN (The Hague) welcomed the Federation on behalf of the dental societies of Holland.

Mr. J. HOWARD MUMMERY (London), president-elect of next year's Congress, spoke for Great Britain, and extended a cordial invitation to those present. The following delegates spoke: Dr. BROPHY (Chicago), Dr. SCHAEFFER-STUCKERT (Frankfort-on-Maine), M. VILLAIN (Paris), Dr. WEISER (Vienna), Dr. GUERINI (Naples), M. ROSENTHAL (Brussels), Dr. AGUILAR (Madrid), Professor CHRISTENSEN (Copenhagen), and M. LENHARDTSON (Stockholm).

Telegrams were sent to the Queen Mother of Holland, the King of Denmark, and the King of Sweden in recognition of their patronage of the Dental Hygiene National Committees in their countries, and gracious replies were received.

In the Committee of Hygiene Professor JESSEN (Strassburg) announced that many new national committees and associations had been established, notable progress having been made in Russia, where dental treatment was prominent in the hygiene exhibition now being held in St. Petersburg. In Germany 200 dental clinics for school children were in full working order. In Great Britain it was reported that the education authorities were appointing both whole-time and part-time school dentists, and that London had now 12 dental clinics and would have 20 before the end of the year. A school dentist with a dental surgery caravan had been started by the Montgomeryshire authorities (Wales) to travel the country districts. In America the Forsyth Children's Dental Institute would be opened in Boston in November. It had cost over $3,000,000. A Royal Commission had been appointed in Sweden to organise school dental treatment as the result of the visit of the Federation to Stockholm last year and the representations made to official quarters.

In the Committee on Education Dr. W. GUY (Edinburgh) reported upon Dental Pedagogics.

Dr. DUBEAN (Montreal) wrote informing the Commission that the Government of Quebec Province had erected a new dental school buildings at a cost of £60,000, and requested a delegation from the Federation at the opening ceremony in October next.

Dr. RIETHMULLER, on behalf of Dr. Kirk (Philadelphia), reported upon the progress made in the erection of the Evans Dental School and Museum in Philadelphia, which is anticipated as likely to cost over £200,000.

The Commission on Bibliography was presided over by M. HUET (Brussels), who reported the progress made in the international codification of dental curricula, registration of dentists, and dental literature in all countries of the world. A salaried official was appointed and a report was ordered to be presented to the Congress in London.

The Federation passed a resolution urging upon all Governments the importance of including treatment by qualified dentists in all State-aided schemes of medical assistance, and especially in the case of children.

Professor BOLK (Amsterdam University) delivered a lecture before the Federation in the Anatomical Theatre at Amsterdam upon the results of his examination of the teeth and jaws of 30,000 crania. Amongst various peculiarities he emphasised the following: (1) The non-eruption of the mandibular second premolar and the continued existence of the mandibular second milk molar; (2) the so-called fourth maxillary molar, which he demonstrated in some 30 specimens as a single-rooted tooth with a molariform crown, situated buccally between the second and third maxillary molars (para-molar he named it), or behind the third molar (disto-molar); and (3) the proximity of the roots of the second and third molars to the maxillary antrum.—The members afterwards visited the museum and inspected the specimens, and expressed approval of the system of mounting and display.

Various social entertainments were provided by the dental societies of Holland, including an excursion to Minderslot Castle and the Zuider Zee. The banquet of the Federation was held at the Palace Hotel, Scheveningen, during the course of which the President presented the Diploma of Honour of the Miller prize to Dr. Charles Goden, of Paris.

MEDICINE AND THE LAW.

An Inquest without Medical Evidence.

AN inquest was held recently at Norwich upon the body of a carman, 35 years of age, employed by the Great Eastern Railway Company, who was apparently killed while delivering some barrels with a van and a pair of horses in the yard of a local brewery. It was proved that the deceased, having delivered the barrels, was climbing back into his seat from which he had dismounted, and that the horses started off from no assignable cause, when the van collided with a building and the deceased fell to the ground between the building and the van. A witness stated that he saw the van wheels pass over the head of the deceased. In these circumstances it might have been expected that medical evidence would have been called to show that the injuries occasioned by the van were the only cause to which death could be assigned, and also that there was no evidence of any disease to account for a carman in the prime of life and outwardly in good health allowing his horses to go on and himself to be jerked from the van. Such evidence might be of great importance if, in subsequent proceedings for compensation by a widow, the employers were to set up as exonerating them from liability that the deceased's death was not due really to the accident which apparently occurred, but to sudden illness or some other cause. In the case in question, however, there was

apparently no post-mortem examination or any medical witness, the matter being concluded by the evidence of a police constable, who said that he had been called to the scene of the occurrence and that the deceased's neck was broken and his head seriously injured. This may have been perfectly true, but it did not constitute the best evidence obtainable as to the cause of death, which is what every coroner's jury should have before it.

Woods v. *Wilson: Workmen's Compensation.*

The application of the law relating to workmen's compensation, as developed by the various cases already decided, seems to present some difficulty in the case of Woods *v.* Thomas Wilson, Sons, and Co., Limited, decided in the Court of Appeal recently in favour of the employers, who appeared as appellants, and it seems probable that the House of Lords may also be asked to consider the points raised. The facts of an obscure case, so far as they were proved, were as follows. Woods was employed on board a lighter at Hull in coaling a ship with baskets which he had to fill with coal. While so occupied, and having a basket held between his body and a pile of coal, a fall or rush of coal either struck him in the abdomen or forced the basket of coal against it. He ceased work, being in great pain, and, after waiting, went home, where he was attended for four days by his own medical practitioner, who finally sent him to the infirmary, where an operation was performed. This showed a perforation of the bowel, which was attended to, and also the fact that the patient had been suffering for some unascertained period from appendicitis. Three days after the operation the patient died. A post-mortem examination was held, and a second perforation of the bowel was found. His honour Judge Fossett Locke upon these facts made an award in favour of the dependents of the deceased, holding that a weakened bowel had been the result of his proved physical condition and age, and that the effect of the accident had been to injure the weakened bowel, which otherwise might have lasted for a considerable time without interfering with his work. The injury which resulted from the accident gradually caused perforation, and so accelerated death. The medical evidence, it may here be noted, with regard to the second perforation had been that it could not have occurred earlier than 12 hours after the operation referred to. The Court of Appeal, after hearing argument, was divided, the Master of the Rolls and Lord Justice Swinfen Eady being of the opinion that although there was an accident and although death took place after it there was no evidence to connect the death with the accident. Such connexion, the Master of the Rolls said, must be established by direct evidence or by legitimate inference, and must be something more than guess, conjecture, or surmise. Death was not ascribed either to the appendicitis or to the perforation discovered by the operation, but to the second perforation. This had taken place after the operation, and there was no evidence connecting it with the accident. The legitimate inference from the evidence was that the perforation did not result from the accident. There was no trace of such a bruise as would have followed a serious blow. Medical evidence showed that a blow crushing the body would be required to produce perforation of the bowel. The first perforation was apparently due to the appendicitis, and there was no reason for holding that the second was not due to the same cause. Lord Justice Swinfen Eady, in concurring, took the view that the evidence was equally consistent with the accident having caused the death or with it not having done so, in which case the onus of proving that the accident was responsible lay with the applicant. He held that the case was governed by Barnabas *v.* Bersham Colliery Co., 103 L.T. 513. Lord Justice Kennedy, in dissenting, considered that the conclusion which his honour Judge Fossett Locke had arrived at "with the peculiarly valuable assistance of the medical assessor" was justifiable, and that the court could not reverse it, having regard for decided cases, and particularly Cloon, Clayton, and Co. *v.* Hughes, 1910, A.C. 247. His lordship referred with approval to the reasoning and judgment of the county court judge, and considered that the inference drawn was a legitimate one. Looking at the evidence broadly, the workman's death had been accelerated by the accident, the occurrence of which was proved

A Christian Scientist Tried for Manslaughter and Acquitted.

Benjamin Jewell, a builder living at Stroud Green-road, was recently tried at the Old Bailey for the manslaughter of his little daughter, 7 years of age, who died from diphtheria on July 28th, without medical aid being summoned. The facts of the case were of the description usual upon such occasions. The child became ill upon July 17th, and the prisoner communicated with a person professing to cure disease "by Christian Science" methods, which in this instance were employed "at a distance"—that is to say, that the so-called healer did not see the patient, but was assumed to be praying in her behalf. The healer's prayer not proving effective to stay the course of an attack of diphtheria, the father seems to have recognised too late that the illness was of a character so serious as not to admit of trifling, and he at last called in a medical practitioner, who, however, only arrived to find the little girl dead. This gentleman was told by the prisoner that the illness, he believed, was mumps, and in reply to cross-examination very properly stated that he could understand the possibility of a layman making such a mistake. Dr. W. H. Willcox said, in answer to a question, "I should have thought that it must have been obvious that skilled treatment was required," and this was as far as medical evidence could take the case for the prosecution, the assumption being that skilled treatment applied in time might have saved the child's life, as it would certainly have given her a better chance of living. Mr. Justice Rowlatt, in summing up, told the jury that if the prisoner had been proved not to have called in a medical man when he had reason to believe that his child was suffering from diphtheria he would have deserved severe punishment, whether a "Christian Scientist" or not, but that he could not be convicted merely because he was thought to be a "stupid donkey" for not showing more *vois* in the matter. A man could not be convicted of a crime merely on the ground of his stupidity. The jury accordingly returned a verdict of "Not guilty," and the learned judge, in ordering the prisoner to be discharged, strongly advised him to be more careful in future, saying, "If there is anything at all that you don't understand go to a doctor."

The Adulteration of Milk.

The heavy fine of £100 with costs amounting to £3 4*s.*, and with the alternative of three months' imprisonment, was imposed at Old-street police-court recently upon a dairyman, Meredith Jenkyns, of Gibraltar-walk, Bethnal Green, for selling milk to which 8 per cent. of water had been added. There were several previous convictions of the defendant recorded. The persistence of such persons in continuing to pursue their calling, and to adulterate the food of the poor, leads to the inference that the trade is a profitable one, and that the likelihood of being convicted is not sufficient to deter those who have had experience of the illicit rewards of dishonesty.

THE METROPOLITAN ASYLUMS BOARD: THE REPORT FOR 1912.

The Provision of Sanatoriums.

THE outstanding feature of the general policy of the Metropolitan Asylums Board last year was unquestionably the assumption of very considerable responsibilities in the provision of sanatoriums for those entitled to sanatorium benefit under the National Insurance Act. In taking this momentous decision the Board was quite probably swayed by the knowledge that otherwise the administration of this part of the Act would break down altogether in London, a calamity to the great bulk of the community which it was most desirable to avert. Nevertheless, no little courage and public spirit were needed to enter a path so widely divergent from that which the Board, as originally devised, was expected to tread. In point of fact, the Metropolitan Asylums Board, created as an integral appendage of Poor-law administration, has frequently been constrained by force of circumstance to become less and less a Poor-law and more and more a local government authority. At the present time its functions are varied, and have been assigned to it on no settled plan or principle, although, for all its theoretical imperfections,

its share in the care of the public health is worthily, and on the whole efficiently, carried out, and its freedom from political bias is commendable.

Without the assistance of the Metropolitan Asylums Board the provision of sanatorium accommodation for the tuberculous insured in the County of London would have been practically impossible, at any rate for a considerable space of time. This fact was perceived clearly enough by the Board from the first, and duly pointed out to the Local Government Board. By the wording of the Act, however, it was not competent for the London Insurance Committee to make direct arrangements with the Metropolitan Asylums Board, though there was no objection to the County Council so doing. The committee, therefore, entrusted the arrangements to the Council, which in turn passed on the work to the Board. Here, again, it will be seen that the Board did not lack courage in rising above legal irregularities and technicalities. On the whole it can be said that the Board deserves praise for its prompt action in this matter, but unfortunately there was lacking a full acquaintance with the fundamental principles of sanatorium control. Consequently, instead of obtaining expert help from outside, the Board persisted in the policy of buying its knowledge by experiment. It was pointed out at the time more than once, but with no effect, that this was a mistaken policy, and the upshot was exactly what the critics predicted. Open trouble ensued and reflected discredit which it will require a certain length of time to live down. We refer, of course, to the recent "mutiny" at the Downs Sanatorium—an incident which could never by any possibility have occurred if the Board had been willing to listen to the advice of experts in sanatorium administration. In the light of these events there are certain passages in the report of the Board for 1912 which make queer reading. The Board in that report "believed it would be found that in actual working their conduct of the sanatoria would proceed smoothly and without raising any of the difficulties which in some directions had been anticipated. Subsequent events fully justify this view." Naïve as this unfulfilled prophecy now appears, it is surpassed by the words of the President of the Local Government Board, who said in the House of Commons: "Thanks to the public spirit of the Metropolitan Asylums Board, tuberculous insured patients in the London sanatoria have been provided with sanatorium treatment of which not a single complaint has been made, and to which no criticism can be wisely or fairly directed." In drawing attention to certain shortcomings in the way in which the Board translated its policy into action, we would not have it thought that the policy itself is bad. On the contrary, it was a wise and necessary policy that gave the sanatorium care of insured patients to the Board, and it redounds to the credit and the courage of the Board which adopted it.

Statistics of the Infectious Fevers.

Turning to the other work of the Board, which continues on the general lines of the last few years, there are many interesting facts and statistics to be gleaned in the report. Those which deal with the infectious fevers are especially full and informing. The tables show that the progressive decline in the case mortality of scarlet fever and diphtheria which has been noticed for many years is still going on. Of scarlet fever, 9883 cases were admitted to the Board's hospitals during the year, with a mortality of but 1·6 per cent. Diphtheria caused 5219 admissions, with a death-rate of 6·2 per cent. A quarter of a century ago the case mortality of diphtheria in the Board's hospitals was 33·2 per cent. (for a quinquennium), and that of scarlet fever was during the same period 8·3 per cent. In the case of diphtheria the principal agent in this improvement is, of course, von Behring's diphtheria antitoxin; but against scarlet fever we possess no such antidote, and it is quite probable that the disease is milder than it was formerly. The parallelism of the diminished mortality in respect of these two diseases has led antivivisectionists and other opponents of scientific medicine into the belief that the profession exaggerates the virtues of diphtheria antitoxin. There is ample proof that the profession is right about diphtheria antitoxin and its critics wrong; in fact, the superabundance of accumulated evidence is so great that the report omits the annual statistics as being no longer necessary. Enteric fever is gradually becoming an uncommon disease in London, but its case mortality has not correspondingly diminished. Last year 17·8 per cent. of the Metropolitan Asylums Board cases of this disease proved fatal, a higher figure than that of any quinquennial average for 30 years. Measles and whooping-cough were not admitted to the Metropolitan Asylums Board hospitals until the end of 1910. In 1912 there were received 4314 cases of measles, with a mortality of 10·5 per cent., a considerable reduction on that of the previous year; and 1731 cases of whooping-cough, with 8·5 per cent. of deaths, also a satisfactory improvement on 1911. Not a single member of the fever and small-pox hospitals staffs died from infectious disease during the year 1912.

In the medical supplement to the report are a number of valuable papers by various members of the medical staff employed by the Metropolitan Asylums Board. We note particularly a pithy communication by Dr. A. Anderson expressing the conclusions drawn from his researches at Queen Mary's Hospital for Children (Carshalton), to the effect that vaccine therapy is quite useless for chronic otorrhœa.

ASYLUM REPORTS.

Mental Hospital for the County Borough of Leicester, at West Humberstone (Annual Report for the Year 1912).—The average daily number resident at this asylum was 815. The admissions numbered 225, among whom the following causes were assigned as the occasion of insanity: Heredity in 34 cases, mental stress in 27 cases, and alcoholic intemperance in 9 cases. The deaths numbered 74, and of these 21 were over the age of 70. The death-rate was 9·08, and post-mortem examinations were held in 71 cases.

Worcestershire Asylum, Barnsley Hall, Bromsgrove (Annual Report for the Year 1912).—The average daily number on the registers was 609. 137 cases were admitted during the year, the character of the admissions with regard to recovery being very unfavourable. Of the 52 male and 57 female direct admissions, 36 males and 31 females were suffering from forms of insanity from which little hope of recovery could be entertained. In 29·3 per cent. of the direct admissions a family history of insanity or epilepsy was ascertained, and in a further 24·7 per cent. a family history of alcoholism or neuroses was obtained. It appears to be a common experience that not only is the incidence of insanity in a family deliberately concealed, but that the less pronounced forms are unrecognised by the relatives. During the year 50 cases were discharged, and of these 13 were recovered. Dr. Percy T. Hughes, the medical superintendent, writes that whereas the total discharge rates of all asylums show little material variation the proportion of patients discharged recovered varies widely. This marked variation arises from the fact that there is no uniform definition of the term "recovery." In asylums where a strict definition of the term is adopted the proportion of cases discharged recovered is small as compared with the proportion discharged relieved; whereas in those asylums where a less rigid definition is in force the proportion of cases discharged recovered is large as compared with those discharged relieved. During the year 39 deaths occurred, and except in 4 of these post-mortem examinations were held. The percentage of deaths on the daily average number resident was 6·4.

Wilts County Asylum (Annual Report for the Year 1912).—The total number of cases under care during the year was 1165, the average number resident being 994·3. 182 cases were admitted, this number being above the average, and in fact, with two exceptions, the highest of any previous years. Eighty-seven of those admitted suffered from mania, 46 from melancholia, 15 from senile dementia, 12 from epilepsy, and 9 from general paralysis. The physical condition of those admitted pointed in many cases to malnutrition being a contributory, if not the actual, cause of mental breakdown. A history of heredity was discovered in 31·7 per cent. Eighty-five patients were discharged, of whom 63 were recovered. With the exception of two patients, all those discharged recovered had a probationary period on trial. Seventy-six patients died, giving a rate of 7·6 on the average number resident. We are glad to note that it has been thought advisable that a room should be fitted for dental purposes and the services of a dentist retained.

ROYAL MEDICAL BENEVOLENT FUND.

AT the August meeting of the committee 25 cases were considered, and grants amounting to £238 made to 23 of the applicants. The following is an abstract of the cases relieved:—

Widow, aged 57, of M.R.C.S. Quite unprovided for at recent death of husband and dependent on sons who at present cannot entirely support her. Voted £10.

Widow, aged 42, of L.S.A. No income; endeavouring to support herself by taking boarders. Three children, the eldest earning about 15s. a week and the two younger dependent. Voted £10.

L.R.C.P. Edin., aged 84. Has practised in London for more than 50 years, and being too old for panel work has lost the majority of his patients. Voted £12.

M.R.C.S., aged 81. Used to have a good practice in London, but lost his sight some years ago, and during his enforced retirement has unavoidably exhausted his savings. Children only able to give slight help. Voted £12.

Daughter, aged 67, of late M.D. Edin. Only certain income an annuity of £13, and is in such poor health that occupation is impossible. Voted £12.

Widow, aged 38, of L.R.C.P. Since husband's death six years ago has supported herself and her daughter, aged 8, by massage; now asks for a little help owing to an unavoidable increase in expenses. Voted £6.

Widow, aged 84, of M.R.C.S. Used to be comfortably off, but entrusted her money to a relative who died six months ago and was found to be insolvent. Is given a home by a daughter. Voted £5.

Son, aged 13, of late L.R.C.P. Edin. Lost his father 18 months ago from phthisis and his mother quite recently from new growth. Entirely dependent on relatives, who can ill afford to help. Voted £12.

Daughter, aged 49, of late M.R.C.S. No income, and being a chronic invalid is dependent on brothers whose earnings are small. Voted £6.

Widow, aged 63, of L.R.C.P. Edin. Since husband's death several years ago has supported herself by taking boarders, but now suffers from a grave complaint and is quite unfit for occupation. Slight help from children. Voted £12.

Daughter, aged 63, of late M.R.C.S. Lost her capital owing to the failure of a bank several years ago, and is practically dependent on friends whose contributions are precarious and may cease. Is a confirmed invalid and often suffers great pain. Voted £12.

Widow, aged 76, of M.R.C.S. Quite unprovided for at recent death of husband, and is applying for an Old Age Pension. Voted £18.

Widow, aged 50, of M.B., C.M. Glasg. Income small, and is obliged to ask for a little help towards the heavy expenses consequent upon her husband's death. Voted £5.

Wife, aged 45, of M.B., B.Ch. Oxon. Was deserted about ten years ago and supports herself by nursing, but asks for a little assistance towards expenses incurred for her daughter, aged 13, who has been in bad health for the last 18 months. Voted £10.

Widow, aged 56, of M.D. Has supplemented the help given by children whose earnings are very small by giving music lessons, but now, being in failing health, is obliged to ask for assistance. Voted £12.

Daughter, aged 64, of late M.R.C.S. Maintained herself for many years by dispensing, but is now dependent on precarious earnings from wood carving, &c. Relieved seven times, £70. Voted £10.

Daughter, aged 74, of a surgeon who used to be in the Scots Guards. Was left amply provided for, but lost everything through the defalcations of her trustee, and now only has two small annuities, one purchased by friends, the other from a charitable society. Relieved once, £10. Voted £10.

Widow, aged 34, of L.R.C.P. Is a nurse matron at a good school for girls, but wants help to maintain herself and daughter, aged 10, during the holidays. Relieved once, £10. Voted £10.

Daughter, aged 70, of late M.R.C.S. Only income an Old Age Pension of 5s. a week. Relieved five times, £60. Voted £12.

Widow, aged 43, of M.B., C.M. Aberd. Lives rent free as a housekeeper, and receives a few shillings a week as salary, but is unable to meet the holiday expenses of her two children, one of whom is at Christ's Hospital. Relieved six times, £58. Voted £10.

Widow, aged 56, of L.F.P.S. Glasg. Small earnings by writing, &c., and slight help from friends. Two children, the younger still dependent. Relieved eight times, £82. Voted £10.

Daughter, aged 57, of late M.R.C.S. Is a trained nurse, but has been incapacitated for the last 18 months, and has now exhausted her small savings. Relieved once, £10. Voted £10.

Daughter, aged 57, of late M.R.C.S. Used to maintain herself as nurse companion, but has suffered from a chronic complaint for some years past, and is now practically incapacitated. Relieved 11 times, £109. Voted £12.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 11, Chandos-street, Cavendish-square, London, W.

DUST-HEAPS IN CAMBERWELL.—As a result of an allegation that six children had died in the Southwark Infirmary, East Dulwich-grove, in consequence of enteritis due to refuse poisoning from accumulations of house refuse on a near-by railway siding, an investigation is being made by the Local Government Board. The refuse is deposited there pending removal by train to the country for use as manure. The inspector's report is not yet issued, but it is understood that altogether independently of the proof or otherwise of the above allegation the dust-heaps are considered as in themselves objectionable, and steps are being taken in conjunction with the Camberwell sanitary authority to see what can be done to remove this cause for complaint.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

Borough of Portsmouth.—This county borough had in 1911 a Census population of 231,141, including 6661 inmates of the military and naval barracks. Dr. A. Mearns Fraser is able to report a continuance of its notably low death-rate, which, when corrected by the Registrar-General's factor for age and sex, was 12·7 per 1000 in 1912. The low death-rate is largely accounted for by the very small number of deaths (45) from diarrhœa in infants under one year of age during the cold and wet summer and autumn of that year. On the other hand, Portsmouth suffered from an exceptional prevalence both of scarlet fever and diphtheria, the spot-map which accompanies the report showing that both diseases were distributed over practically every part of the borough. The number of cases of diphtheria notified during the year was 1051, and of these 124 proved fatal. The fatality rate of 11·8 per cent. is remarkably high when compared with London and other large centres of population. The attack rate of the disease was 444 per 100,000, and the highest recorded since the introduction of notification of diphtheria in Portsmouth in 1884. Dr. Fraser is unable to point to the exceptional operation of any one method of conveyance of diphtheria infection during the year, though he notes that a new factor of infection among children may have been introduced by cinematograph performances. The occurrence of infection at schools was frequently observed, and usual precautionary measures were adopted. An endeavour was made to keep children who had been attacked by the disease from school until two bacteriological examinations of the throat had shown it to be free from diphtheria infection, and to exclude children from houses in which diphtheria had occurred for a fortnight after the case had been removed to hospital and until a negative result of throat examination had been obtained. It would appear, however, that it was found difficult strictly to maintain these measures during the period of greatest prevalence. Altogether 887 bacteriological examinations of swabs (331 positive) were made, and these include 81 specimens of nasal discharge, of which 38 contained diphtheria bacilli. The Milton Hospital was used for the isolation both of diphtheria and scarlet fever cases, but its accommodation was inadequate to the needs of the epidemic. Enlargement of the hospital is now under consideration. Antitoxin is supplied to medical practitioners by the health department, and altogether 449 bottles of antitoxin (223 free of charge) were thus issued. The numbers seem rather small when it is considered that more than a thousand diphtheria cases had to be dealt with, and Dr. Fraser urges that the high mortality would have been greatly reduced by the use of antitoxin at an earlier stage than was generally practised. The scarlet fever cases notified during the year were 1407, with, however, only 29 deaths. Part of this prevalence was traced to a particular milk-supply in April, it being conjectured that the milk had in some way or other been infected by a milker in whose household a case of scarlet fever was detected. Dr. Fraser repeats the warnings of previous reports against the consumption of sewage-polluted shell-fish, which he regards as having been responsible for a considerable proportion of the 140 cases of enteric fever which occurred during the year. The report contains some useful particulars of the Municipal Tuberculosis Dispensary at Portsmouth[1] and details of its organisation. As is well known, this dispensary was established before the inducements of the National Insurance Act were put forward, and the experience of the dispensary has been largely utilised by other local authorities and by the Departmental Committee on Tuberculosis, of which Dr. Fraser was a member. The report notes that the relations of the dispensary with medical practitioners in the borough have been quite satisfactory, and a large proportion of the patients have been sent for treatment by their own medical attendants. A special feature of the system is the work of the care committee, which comprises representatives of charitable organisations in the borough, and supplements the medical and nursing work by providing nourishment and by giving attention to various social conditions in suitable cases. "One of the principles of the committee," Dr. Fraser states, "is that if a case is to be helped at all

[1] THE LANCET, August 3rd, 1912, p. 289

the assistance must be adequate, for half measures are of little use in dealing with cases of consumption." The total number of patients who received a course of tuberculin treatment at the dispensary during 1912 was 567. They have included advanced cases, in which tuberculin has been found to be of assistance symptomatically, by improving appetite and sleep, lessening headaches, breathlessness, and expectoration, and giving the patient a feeling of well-being which in some cases has allowed him to carry on his work. The report includes the wider scheme for future tuberculosis work which is being undertaken under the administrative and financial conditions now available. A very valuable clause was included in the Portsmouth Corporation Act, 1883, to prevent any new building intended for human habitation being occupied until it has been certified by the medical officer of health and borough engineer after examination to be, in their opinion, in every respect fit for human habitation. The enforcement of this clause had been allowed to lie dormant, but last year it was resuscitated with excellent results, especially in the prevention of dampness in new dwellings owing to the improper use of sea-sand or to other causes of faulty construction of the walls. The procedure is specially important in a town like Portsmouth where so many of the working classes purchase their own houses.

County of Northampton.—Mr. C. E. Paget's annual report on the health of Northamptonshire for 1912 makes an earlier appearance than is usual in the case of county reports, and we think its practical utility cannot but be increased by this circumstance. It records the inception of the new lines of tuberculosis work in the county, which at the end of 1912 had appointed a county tuberculosis officer at a commencing salary of £500, and was making progress with a general scheme for treatment and prevention of this disease. The county council has also developed the system of county appointments of health visitors, and Mr. Paget shows that the work of the single county health visitor who acted in certain parts of Northamptonshire in 1912 has continued to effect a striking improvement in the nutrition of infants and in the reduction of infantile mortality. The report epitomises those of the medical officers of health of 12 urban and 16 rural districts with a Census population of 213,733—95,496 in urban and 118,237 in rural areas. The last Census shows that, on the whole, there has been a substantial check in the decrease of population in the rural districts which had been conspicuous in 1901; only five districts showed a fall in population, as against 13 at the previous Census, while there was a total gain of 1481 persons in the rural districts between the two Censuses. The prevailing feature of the majority of the reports of the district medical officers of health during the year is the evidence of the attention paid to housing conditions and the sufficiency or otherwise of housing accommodation. Mr. Paget does not look for any considerable increase in the number of working-class dwellings from private building enterprise, and reports that some district councils have commenced themselves to build cottages. On the whole, there appears now to be a greater tendency to repair old cottage property than to demolish it. The worst derelict houses have been cleared away by the operation of the Housing Act of 1909. While it remains uncertain whether this Act will have the effect of encouraging further building in rural districts by the local authorities or otherwise, it is of first importance to insist upon regular and continuous inspection of cottage property as the best available means for preventing its drifting into a state of hopeless decay and so creating further housing deficiency.

REPORTS OF SCHOOL MEDICAL OFFICERS.

Kent County Council.—In presenting a report which, he says, will terminate his official connexion with the county, Dr. William J. Howarth makes some particularly pertinent observations on verminous conditions in children, who are grouped into the following three divisions: 1. Those of parents who seem inherently incapable of appreciating the idea of cleanliness. These are persons of a low type with whom advice, practical demonstrations at home, and prosecutions are alike of no avail. The only means of dealing with such cases appears to be to make use of the powers of Section 122 of the Children Act, 1908, and institute periodical cleansing of the children. 2. This group belong to parents who are unclean merely from lack of training and example. 3. The group of children who become accidentally infected from Groups 1 and 2. It would be interesting to know what percentage of the population fall into Groups 1 and 2 respectively; both together they have been roughly estimated in other areas at 10 per cent. But the interest of this particular classification lies in the fact, apart from prevention and treatment, that it enables one to get a concrete and definite test of the relative mental, or more accurately psychic, attributes of grades of the population. And it would be even more interesting to have worked out the relation between these three groups classified for verminous condition and other groups classified for mental defect, physical defects, and social condition as indicated by the number of persons per room. In another part of the report is the record of some useful experiments on ventilation of rooms carried out by estimation of CO_2 in atmosphere. The most important of the conclusions is that no schoolroom should be built with windows on one side only, and the "pavilion" type of school is favoured rather than the "central hall" type. It has been decided to establish four inspection clinics in the county, and arrangements have been made, or are in course of being made, for X ray treatment of ringworm, for dental treatment, and for refraction work. The annual cost of medical inspection is given from 1909 to 1912. In the former year it was £2343 7*s.* and in 1912 £1808; the average cost per child inspected in 1912 is also given, and the figures are practically identical with those obtaining in 1911. It is clear that the medical inspection work has nearly, if not quite, reached the point of standardisation.

County of West Suffolk.—The difficulties of obtaining treatment are so considerable in this county that Dr. A. H. Bygott records that as few notices of defect requiring remedying are sent out as is possible. A table showing treatment of defects found from January to the end of February, 1913, reveals that of 148 cases of serious defect only 41 obtained treatment, and even of 73 cases of nits 56 were treated. A table giving result of re-examination of defective children noted in 1910 and 1911 to ascertain numbers treated reveals deplorable results. Of dental cases only 2·5 per cent. boys and 3·8 per cent. girls were treated, and of visual defects only 22·3 per cent. boys and 23·4 per cent. girls. Among deformities a few cases of flat-foot are noted, a defect Dr. Bygott thinks which would be more commonly found if it were systematically looked for.

City and County Council of the City of Exeter.—In the year 1912 Mr. Percy H. Stirk, the school medical officer, was able to form an accurate opinion of the amount of defect requiring remedy, as in the previous four years the whole of the school children had been medically examined. It was decided to begin dental treatment and X ray treatment for ringworm, these being two pressing necessities. An inspection clinic is held each morning of school attendance. A special record has been kept of children classed as backward by head teachers because two or more standards below normal. There were 421 of these children, of whom 284, over 67·4 per cent., had some physical defect accounting for their backwardness, 25 per cent. were backward because of irregular attendance, due in part to illness, leaving less than 8 per cent. in which no apparent cause existed. Defects of hearing, sight, enlarged tonsils, and adenoids were the defects most commonly associated with backwardness.

Bedfordshire County Council.—The view of most school medical officers is probably expressed by Dr. Ronald T. Herdman when he chronicles that his "normal" nutrition is that which is "fairly satisfactory." A table comparing different districts shows that 21·5 per cent. and 16·1 per cent. of boys and 21·0 per cent. and 16·8 per cent. of girls are of poor nutrition in urban and rural districts respectively. A trained nurse appointed as attendance officer and health visitor has so much work to do that a motor bicycle is required.

Tottenham Town Council.—The report for the year 1912 is the work of Dr. Sophia Seekings, who was appointed acting medical officer on the death of Dr. J. F. Butler-Hogan in May of last year, and records great improvements made in the schools and progress toward the solution of difficulties of organisation and of treatment of defects found. During the year 8096 children were examined and 700 re-examined. Heart disease was found in 1·2 per cent. of the older boys, 2·1 per cent. of the older girls, and in 1·6 per cent. of the infants. At the eye clinic Dr. T. W. Letchworth has dealt

with 664 children, making 1900 attendances, and a detailed report of the cases is given. The report contains a series of hints to teachers on the early signs of infectious diseases which should be helpful. A case is recorded which shows the value of an inspection clinic in a very marked way. A small boy was absent for four or five weeks without any medical treatment, and was discovered to have a huge empyema on the left side necessitating prompt removal to hospital, an operation which undoubtedly saved his life. We commend to eugenists Dr. Seekings's remark that "'It's here-dit-ary' is a conclusion which, if formed by parents, requires much argument to convince them that treatment may still be desirable."

Great Yarmouth Town Council.—The report of Mr. A. N. Stevens, school medical officer, shows that he has at his disposal an inspection clinic doing good work, and school nurses actively employed in home visitation. Nevertheless, only 24·4 per cent. of defective children received treatment. A gratifying decrease in ringworm cases from over 300 five years ago to 56 at the present time is recorded. The school medical inspector, Dr. W. H. Harding, thinks that there is evidence to show that dilatation of the heart is probably due to abscesses in association with carious teeth. The statement is made as the result of observations on about six children over a period of 16 months.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In the 96 English and Welsh towns, with populations exceeding 50,000 persons at the last Census and whose aggregate population at the middle of this year is estimated at 17,852,766 persons, 8248 births and 4733 deaths were registered during the week ended Saturday, Sept. 6th. The annual rate of mortality in these towns, which had been 13·3, 13·2, and 13·5 per 1000 in the three preceding weeks, further rose to 13·8 per 1000 in the week under notice. During the first ten weeks of the current quarter the mean annual death-rate in these towns averaged 12·2, against 11·3 per 1000 in London during the same period. Among the several towns the death-rates last week ranged from 4·0 in Swindon, 4·8 in Eastbourne and in Oxford, 5·2 in Southend-on-Sea, 5·4 in Ilford, and 5·7 in Gillingham, to 19·8 in Sunderland, 20·4 in West Bromwich and in Bolton, 22·7 in Barnsley, 22·8 in Aberdare, and 26·4 in Wigan.

The 4733 deaths from all causes were 126 in excess of the number in the previous week, and included 1099 which were referred to the principal epidemic diseases, against numbers steadily increasing from 281 to 991 in the nine preceding weeks. Of these 1099 deaths, 960 resulted from infantile diarrhœal diseases, 45 from diphtheria, 33 from measles, 31 from whooping-cough, 17 from scarlet fever, and 13 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week rose to 3·2 per 1000, against 2·4 and 2·9 in the two preceding weeks. The deaths of infants (under 2 years of age) attributed to diarrhœa and enteritis, which had steadily risen from 149 to 837 in the seven preceding weeks, further rose to 960 last week, and included 199 in London, 60 in Birmingham, 49 in Liverpool, 34 in Manchester, 32 in Sheffield, 27 in Hull, 26 in Leeds, 25 in West Ham, 22 in Nottingham, 22 in Rhondda, and 21 in Cardiff. The deaths referred to diphtheria, which had been 34, 37, and 36 in the three preceding weeks, rose to 45 last week; of this number 7 were registered in London, 3 in Liverpool, and 2 each in Leyton, Stoke-on-Trent, Nottingham, Manchester, Leeds, Newcastle-on-Tyne, and Merthyr Tydfil. The fatal cases of measles, which had declined from 77 to 43 in the six preceding weeks, further fell to 33 last week; 6 deaths occurred in London, 4 in Stoke-on-Trent, 4 in Manchester, and 3 in Sunderland. The deaths attributed to whooping-cough, which had been 49, 36, and 50 in the three preceding weeks, fell to 31 last week, and included 3 each in London, Croydon, Birmingham, and Liverpool. The deaths referred to scarlet fever, which had been 22, 31, and 14 in the three preceding weeks, were 17 last week, of which number 3 occurred in London and 2 each in Liverpool, Manchester, and Oldham. The fatal cases of enteric fever, which had been 9, 12, and 11 in the three preceding weeks, rose to 13 last week, and included 4 in London and 2 in Grimsby.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospitals, which had been 2124, 2070, and 2115 at the end of the three preceding weeks, had slightly declined to 2112 on Saturday last; 298 new cases were admitted during the week, against 230, 239, and 331 in the three preceding weeks. These hospitals also contained on Saturday last 796 cases of diphtheria, 218 of whooping-cough, 128 of measles, and 45 of enteric fever, but not one of small-pox. The 1075 deaths in London were 30 in excess of the number in the previous week, and were equal to an annual death-rate of 12·4 per 1000. The deaths referred to diseases of the respiratory system, which had been 130, 128, and 124 in the three preceding weeks, rose to 132 last week, and were 27 above the number in the corresponding week of last year.

Of the 4733 deaths from all causes in the 96 towns, 186 resulted from various forms of violence and 383 were the subject of coroners' inquests. The causes of 40, or 0·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Manchester, Leeds, Bristol, West Ham, Bradford, Hull, Newcastle-on-Tyne, and in 68 other smaller towns. Of the 40 uncertified causes of death, 5 were registered in Stoke-on-Trent, 5 in Birmingham, 4 in Sheffield, 4 in Gateshead, and 2 each in Coventry, Liverpool, St. Helens, Warrington, and Darlington.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns, with an aggregate population estimated at 2,259,600 persons at the middle of this year, 1083 births and 723 deaths were registered during the week ended Saturday, Sept. 6th. The annual rate of mortality in these towns, which had been 13·1, 14·1, and 14·1 per 1000 in the three preceding weeks, rose to 16·7 per 1000 in the week under review. During the first ten weeks of the current quarter the mean annual death-rate in these Scotch towns averaged 14·1, against 12·2 per 1000 in the 96 large English towns. Among the several Scotch towns the death-rates last week ranged from 11·0 in Leith, 11·5 in Motherwell, and 13·2 in Falkirk, to 16·9 in Kirkcaldy, 18·9 in Hamilton, and 19·1 in Glasgow.

The 723 deaths from all causes were 112 in excess of the number in the previous week, and included 121 which were referred to the principal epidemic diseases, against numbers steadily increasing from 61 to 99 in the five preceding weeks. Of these 121 deaths, 89 resulted from infantile diarrhœal diseases, 14 from measles, 6 from whooping-cough, 6 from diphtheria, 5 from scarlet fever, and 1 from enteric fever, but not one from small-pox. These 121 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·8, against 3·2 per 1000 in the 96 large English towns. The deaths of infants (under 2 years of age) attributed to diarrhœa and enteritis, which had increased from 21 to 65 in the five preceding weeks, further rose to 89 last week; of this number 53 occurred in Glasgow, 8 in Dundee, 7 in Greenock, 4 in Aberdeen, 4 in Leith, and 3 each in Edinburgh, in Hamilton, and in Clydebank. The deaths referred to measles, which had been 13, 15, and 9 in the three preceding weeks, rose to 14 last week, and comprised 10 in Glasgow, 3 in Edinburgh, and 1 in Paisley. The fatal cases of whooping-cough, which had been 11, 6, and 9 in the three preceding weeks, declined to 6 last week, and included 3 in Glasgow. The 6 deaths attributed to diphtheria, 2 of which were registered in Aberdeen, were equal to the average in the earlier weeks of the quarter. The 5 deaths referred to scarlet fever, of which 2 were recorded in Aberdeen, were 5 fewer than the number in the previous week. The fatal case of enteric fever occurred in Glasgow.

The deaths referred to diseases of the respiratory system, which had been 44, 66, and 69 in the three preceding weeks, further rose to 86 last week; 28 deaths were attributed to various forms of violence, against 27 and 22 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,199,180 persons at the middle of this year, 644 births and 458 deaths were registered during the week ended Saturday, Sept. 6th. The annual rate

of mortality in these towns, which had been 19·2, 18·7, and 20·7 per 1000 in the three preceding weeks, fell to 19·9 per 1000 in the week under notice. During the first ten weeks of the current quarter the mean annual death-rate in these Irish towns averaged 17·4 per 1000; in the 96 large English towns the corresponding rate did not exceed 12·2, while in the 16 Scotch towns it was equal to 14·1 per 1000. The annual death-rate last week was equal to 19·8 in Dublin (against 12·4 in London and 19·1 in Glasgow), 20·7 in Belfast, 19·7 in Cork, 15·3 in Londonderry, 19·0 in Limerick, and 34·2 in Waterford, while in the remaining 21 smaller towns the mean death-rate did not exceed 18·1 per 1000.

The 458 deaths from all causes were 17 fewer than the number in the previous week, and included 111 which were referred to the principal epidemic diseases, against numbers rising from 27 to 111 in the six preceding weeks. Of these 111 deaths, 92 resulted from infantile diarrhœal diseases, 10 from measles, 6 from whooping-cough, 2 from enteric fever, and 1 from scarlet fever, but not one from diphtheria or from small-pox. The mean annual death-rate from these diseases last week was equal to 4·8 per 1000; in the 96 large English towns the corresponding rate was 3·2, while in the 16 Scotch towns it did not exceed 2·8 per 1000. The deaths of infants (under 2 years of age), which had steadily increased from 15 to 97 in the six preceding weeks, slightly fell to 92 last week; of this number 31 were recorded in Dublin, 30 in Belfast, 11 in Cork, and 3 in Limerick. The deaths referred to measles, which had been 7, 3, and 6 in the three preceding weeks, rose to 10 last week, and included 4 in Galway and 3 in Waterford. The fatal cases of whooping-cough, which had been 5, 4, and 2 in the three preceding weeks, rose to 6 last week, of which 3 occurred in Galway. The 2 fatal cases of enteric fever were recorded in Dublin and that of scarlet fever in Belfast.

The deaths referred to diseases of the respiratory system, which had been 51, 51, and 43 in the three preceding weeks, were 42 in the week under notice. Of the 458 deaths from all causes, 130, or 28 per cent., occurred in public institutions, and 11 resulted from different forms of violence. The causes of 15, or 3·3 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 96 large English towns the proportion of uncertified causes of death did not exceed 0·8 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointment has been notified:—Fleet-Surgeon: J. Chambers to the *Suffolk*.

ROYAL ARMY MEDICAL CORPS.

Surgeon-General T. M. Corker, honorary physician to His Majesty the King, has been placed under orders for transfer from the Sixth (Poona) Division of the Southern Army in India to the Ninth (Secunderabad) Division and appointed Deputy Director of Medical Services.

Lieutenant-Colonel D. Hunter, D.S.O., commanding the Royal Army Medical Corps Depôt and School of Instruction at Aldershot, has been placed under orders to embark for a tour of service in India, and on arrival will be appointed Assistant Director of Medical Services to the Allahabad and Fyzabad Brigades. Lieutenant-Colonel J. J. Gerrard, senior medical officer in the Sierra Leone Protectorate, has been selected for the increased rate of pay under Article 317 of the Royal Warrant for Pay and Promotion. Lieutenant-Colonel H. A. Bray, principal medical officer of the Egyptian Army, has arrived home on leave of absence. Lieutenant-Colonel O. L. Robinson, Deputy Assistant Director of Medical Services (Sanitary) to the Sixth (Poona) Division, has been transferred to the Home Establishment, and appointed Professor of Tropical Medicine at the Royal Army Medical College, Grosvenor-road, S.W., in succession to Major W. S. Harrison, whose tenure of the appointment has expired.

Major G. J. Houghton has arrived home on leave of absence from West Africa. Major N. J. C. Rutherford has been appointed to the Irish Command on the termination of leave of absence on medical certificate. Major R. G. Meredith has been placed under orders for a tour of service in Ceylon, embarking from Southampton Sept. 27th. Major J. Dorgan, specialist sanitary officer to the Cork District, has been placed under orders to proceed to South China for a tour of duty, embarking Sept. 27th. Major D. J. Collins has been appointed to hold charge of the Military Hospital at Kirkee Cantonment. Major C. C. Cumming has been selected for appointment as Clinical Pathologist to the Military Hospital at Malta. Major E. E. Powell, at present serving in the Aldershot Command, has been placed under orders for a tour of service with the Northern Army in India, embarking Oct. 22nd. Major A. E. Master, medical officer attached to the Royal Arsenal at Woolwich, has been appointed for duty at Windsor. Major H. S. Thurston has been appointed to the Irish Command for duty in the Dublin District. Major H. W. K. Read has been transferred from the Ninth (Secunderabad) Division to Burma for duty at the Military Hospital, Rangoon. Major A. D. Waring has taken over medical charge at Wool Camp on transfer from Hilsea. Major W. Tibbits has been appointed to the Northern Army in India for a tour of service, embarking Sept. 24th. Major G. B. Crisp has been placed under orders to embark for a tour of service in South China, embarking Sept. 27th. Major D. L. Harding has been appointed to hold medical charge at Finner Camp on transfer from the Military Hospital at Belfast. Major R. V. Cowey has been transferred from the Military Hospital at Bulford Camp, Salisbury Plain, to Tidworth. Major R. N. Hunt has arrived home on leave of absence from Cairo.

Captain E. L. Moss has been selected for appointment as Specialist in Midwifery and Diseases of Women and Children, and placed in charge of the Military Families General Hospital at Portsmouth. Captain G. H. Stack has been appointed to the Eastern Command on the termination of leave of absence home from West Africa. Captain P. J. Marett has embarked for a tour of service in Malta. Captain J. du P. Langrishe has been placed under orders to join the Irish Command on Oct. 16th, and on arrival will be appointed to the Cork District for duty. Approval has been granted by the Director-General Army Medical Service for an exchange between Captain W. F. H. Vaughan, stationed at the Military Hospital, Cork, and Lieutenant A. S. Heale, attached to the Military Hospital at Malta. Captain A. S. Cane has been selected for appointment as Specialist in Dermatology and Venereal Diseases to the Sixth (Poona) Division. Captain W. F. H. Vaughan has been placed under orders for a tour of service with the Northern Army in India, embarking Sept. 12th. The following officers at present serving in the Irish Command have been selected to attend the next courses of study for promotion to the rank of Major to be held at the Royal Army Medical College, Grosvenor-road, S.W.:—Captains: E. G. Anthonisz, A. W. Bevis, A. H. Bond, A. Dawson, G. De la Cour, W. Egan, F. Forrest, H. G. Gibson, V. C. Honeybourne, A. E. S. Irvine, A. H. Jacob, M. P. Leahy, A. S. Littlejohns, F. A. McCammon, E. M. O'Neill, G. H. Rees, P. S. Sampson, W. J. Weston, and A. S. Williams. Captain D. B. McGrigor has been transferred from the Military Hospital at Meerut Cantonment to Ranikhet. Captain A. E. G. Fraser has arrived home for duty from Cairo, tour expired. Captain J. A. Turnbull has been transferred from the Military Hospital at Oxford and placed in medical charge at Wedgnock Park Camp. Captain R. R. Lewis has left the Aldershot Command for a tour of duty in the Sierra Leone Protectorate. Captain R. H. Nolan has taken up duty at the Military Hospital, Glasgow, on transfer from Glencorse. Captain J. G. Bell has been appointed to hold Medical Charge at Altcar Camp. Captain J. B. Hanafin has been transferred from the Military Hospital at Nowshera Cantonment to Gharial, Muree Hills District. Captain C. M. Nichol has arrived home on leave of absence from the Military Hospital at Cairo. Captain G. W. G. Hughes has qualified as a Specialist in Ophthalmology at the recent promotion examination held at the Royal Army Medical College. Captain J. B. Meldon has taken up duty at the Military Hospital, Eastbourne, on transfer from Brighton.

Lieutenant O. W. J. Wynne has been placed under orders for a tour of service with the Northern Army in India, embarking Sept. 12th. Lieutenant C. C. Jones has been appointed to the London District for duty at the Queen

Alexandra Hospital, Grosvenor-road, S.W. Lieutenant S. H. Smith has taken up duty in the Eastern Command. Lieutenant J. L. Ritchie has been transferred from the Military Hospital at Lichfield to the Aldershot Command. Lieutenant S. J. Barry has been appointed to the Royal Herbert Hospital at Woolwich on transfer from Guildford. Lieutenant J. Hare has taken up duty in the Belfast District on transfer from Londonderry. Lieutenant H. M. Sealy has been appointed to the Irish Command, and on arrival will be posted to the Dublin District for duty. Lieutenant T. J. Hallinan has been appointed to the Military Hospital at Calcutta on completion of a course of instruction in Military Sanitation at Lucknow Cantonment. Lieutenant W. A. Frost has been transferred from the Military Hospital at Poona Cantonment to Kirkee. Lieutenant S. J. Higgins has been appointed to hold medical charge at Scartngloraine Camp on transfer from the Military Hospital at Cork. Lieutenant R. Hemphill has been appointed to the Southern Command. Lieutenant H. C. Todd has been appointed to the Southern Army in India for a tour of service, embarking Sept. 24th. Lieutenant E. C. Beddows has been appointed to the Irish Command. Lieutenant E. C. Lang has been appointed to hold medical charge at Maryborough Heath Camp on transfer from the Military Hospital at the Curragh. An exchange of destinations in India and dates of sailing between Lieutenants H. S. Blackmore and H. W. L. Allott has been approved; the former will embark on Dec. 11th for Southern India and the latter for Northern India on Nov. 21st. Lieutenant S. P. Sykes has been transferred from the Military Hospital at Kingston-on-Thames to Woolwich. Lieutenant R. E. Porter has taken over medical charge at Poeghane Camp on transfer from the Military Hospital at Waterford.

OFFICERS TRAINING CORPS.

Royal College of Surgeons in Ireland.—Major Auckland Campbell Geddes ceases to serve with the contingent (dated August 4th, 1913).

INDIAN MEDICAL SERVICE.

Colonel A. O. Evans has been confirmed in the appointment of Inspector-General of Civil Hospitals in Burma by the Government of India.

Lieutenant-Colonel Bruce Seton, Deputy Director-General of the Indian Medical Service, has been appointed Brevet-Colonel. The services of Lieutenant-Colonel T. E. Dyson have been replaced temporarily at the disposal of His Excellency the Commander-in-Chief in India. Lieutenant-Colonel W. R. Edwards, C.M.G., has been appointed to officiate as Inspector-General of Civil Hospitals in Bengal Presidency during the absence on leave of Colonel G. F. A. Harris. Lieutenant-Colonel T. W. Stewart, civil surgeon at Akyab, has been granted privilege leave for three months, combined with furlough for one year and nine months.

Major F. V. O. Beit has been appointed Civil Surgeon at Meiktila, in succession to Captain E. B. Munro. Major L. E. Gilbert, whose services have been replaced by the Government of Madras at the disposal of the Government of Burma, has been appointed Civil Surgeon at Akyab, in succession to Lieutenant-Colonel T. W. Stewart. Major W. M. Anderson has been selected for appointment as Residency Surgeon to the Gwalior State. Major P. K. Chitale has been appointed to officiate as Civil Surgeon of the First Class during the absence on furlough of Major W. H. Kenrick.

Captain D. G. Cooper has been appointed a Specialist in Electrical Science. The services of Captain R. A. Lloyd have been placed at the disposal of the Central Provinces Administration for civil employment. Captain G. L. Duncan has been appointed Specialist in the Prevention of Disease and placed in charge of the Bacteriological Research Laboratory at Brigade Headquarters, Nasirabad. The services of Captain J. B. Baket have been replaced at the disposal of H.E. the Commander-in-Chief in India. Captain A. C. Munro has been appointed to hold substantive medical charge of the 128th Pioneers. Captain J. H. Murray has been appointed to officiate as Senior Medical Officer at Port Blair during the absence on leave of Major J. M. Woolley. Captain C. F. Marr has taken up duty at Lahore Cantonment as officiating Medical Storekeeper to Government during the absence on leave of Major A. A. Gibbs. Captain H. P. Cook has been appointed Civil Surgeon at Wana.

The King has approved of the admission of the undermentioned gentlemen as Lieutenants on probation: Sahib Singh Sokhey, Atul Krishna Sinha, James Findlay, Allan Seddon, Jyotish Chandra De, William Collis Spackman, and Robert Morrison Easton.

The King has approved of the confirmation of the commissions of the following Lieutenants on probation, with effect from Jan. 25th, 1913: Richard Reginald Maitland Porter, Robert Sweet, Patrick Joseph Walsh, and Archibald Campbell Macrae.

COLONIAL MEDICAL SERVICES.

West African Medical Staff.—The death has occurred of Mr. P. F. Foran, Medical Officer, Southern Nigeria. Dr. W. Morrison, Medical Officer, Northern Nigeria, and Mr. W. Browne, Medical Officer, Southern Nigeria, have resigned. Dr. C. T. Costello retires on pension, and Dr. M. W. Ruthven also retires. The following gentlemen have been selected for appointment to the Staff: Mr. C. J. H. Pearson and Dr. B. W. F. Wood, Northern Nigeria; and Mr. H. North, Southern Nigeria.

Other Colonies and Protectorates.—Mr. A. D. Clanchy and Mr. Leslie Webb have been selected for appointment as Medical Officers, Uganda. Dr. P. F. Nunan, Dr. J. H. Thomson, Dr. G. Dunderdale, and Dr. J. H. H. Pirie have been selected for appointment as Medical Officers, East Africa Protectorate. Dr. J. H. C. Greene has been selected for appointment as a Medical Officer, Federated Malay States.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant William Tyrrell is confirmed in his rank.

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st East Anglian Field Ambulance, Royal Army Medical Corps: Charles Frederick Searle to be Lieutenant (dated August 13th, 1913).

2nd West Lancashire Field Ambulance, Royal Army Medical Corps: John Francis Roberts to be Lieutenant (dated July 24th, 1913).

Attached to Units other than Medical Units.—Lieutenant Charles E. M. Jones to be Captain (dated July 1st, 1913).

For attachment to Units other than Medical Units.—Lieutenant Thomas H. La N. Hewitt to be Captain (dated June 18th, 1913). Lieutenant-Colonel Edward B. Reckitt is retired, and is granted permission to retain his rank and to wear the prescribed uniform (dated Sept. 6th, 1913).:

Unattached List.—Reginald William Fletcher to be Second Lieutenant (dated Sept. 1st, 1913). Lieutenant-Colonel James E. Shaw resigns his commission (dated Sept. 6th, 1913). Captain Arthur Tinley Sissons, from the 3rd Northumbrian Field Ambulance, Royal Army Medical Corps, to be Captain (dated Sept. 6th, 1913).

THE ROYAL NAVAL MEDICAL SCHOOL.

In the account of the Naval Medical Service published in the Students' Number of THE LANCET no special notice was given of the Royal Naval Medical School, whose services are now of such value to naval medical officers. This school was established at the Royal Naval College, Greenwich, on the recommendation of the Durnford Committee, it being considered desirable that the Naval Medical Service should, through its school, be in touch with the principal civil medical schools and institutions in London, should have opportunities of making use of the chemical laboratories at the College, and should be in close proximity to the Dreadnought Seamen's Hospital and the London School of Tropical Medicine. It is situated in the Queen Anne block of the College, and was opened on May 1st, 1912. It consists of a lecture theatre, laboratories, research rooms, museums, animal rooms, and all the necessary rooms for the study and teaching of general and naval hygiene, clinical pathology, tropical medicine, and microbiology. In conjunction with the medical school at the Royal Naval Hospital at Haslar, it serves the same purpose in the Royal Navy as does the Royal Army Medical College at Millbank in the Army. There are three distinct courses laid down, and each of these occurs twice a year. The courses are: (1) For acting surgeons, of two months' duration, the remaining four months being spent at Haslar; (2) for surgeons, prior to examination for promotion to staff surgeon, of five

months' duration; (3) for senior medical officers—viz., fleet surgeons and senior staff surgeons—of three months' duration. The average number of officers undergoing these courses is about 80 per annum. The teaching staff, which will probably be augmented in the near future, is at present as follows: Professor of Microbiology, &c.: Fleet-Surgeon P. R. Bassett-Smith, R.N., C.B., M.R.C.P. Lond., M.R.C.S. Eng., L.S.A., Dipl. Trop. Med. and Hygiene Camb. Professor of Hygiene, &c.: Fleet-Surgeon A. Gaskell, R.N., F.R.C.S. Eng., L.R.C.P. Lond., D.P.H. Lond. Professor of Chemistry: Professor Vivian Lewes, F.I.C., F.C.S. Instructor of Chemistry: Mr. J. S. S. Brame, F.C.S. Director of Medical Studies: Fleet-Surgeon A. Gaskell, R.N.

MEDICAL PRACTICE UNDER THE INSURANCE ACT.

(BY OUR SPECIAL COMMISSIONER.)

(*Continued from p. 766.*)

XX.—THE STRUGGLE AT BRADFORD.

IN the contest between the medical profession and the Government in regard to the Insurance Act, Bradford held a prominent place. It was the representative of Bradford who at the meetings of the British Medical Association proposed certain of the resolutions strongly condemning the Act, and he also eloquently advocated energetic resistance. Therefore the eyes of the Government, it was thought, would be specially directed towards this storm centre, particularly as the Chancellor of the Exchequer made a marked allusion to Bradford in one of his speeches. Then, in respect to the organisation of the profession, Bradford has the reputation of being one of the strongest places in England. It may be remembered that in Bradford a Medico-Ethical Society assessed all the houses in the town and fixed the medical fees which they considered that their inhabitants should pay. The minimum fee was allowed for all dwellings rented at less than £25. They also organised a very successful strike against the municipal authorities in regard to the appointment of police surgeons, when the most admirable discipline was maintained in the ranks of the profession. To-day the Medico-Ethical Society and the West Riding Medical Union are merged in the Bradford Division of the British Medical Association. The practitioners of Bradford resisted the Act up to the last; nowhere in England was the feeling stronger against the position into which the medical profession was being forced. In one outlying district called Bringley, where there was hardly any medical practice except club contract practice, I understand that the four local club doctors viewed even the first offer under the Act of 4*s.* 6*d.* as a considerable improvement on the old club rates, but the position at Bringley was exceptional. In the other parts of the neighbourhood, including the adjacent rural or agricultural population, there were only a few practitioners who felt somewhat inclined to work the Act. Thus, when on the last Friday in December, 1912, a great meeting was held to decide what the profession should do there were only three or four present early in the proceedings who were in favour of working the Act. On that occasion the taking of the vote was postponed to a late hour, and by 10 P.M. most of the local practitioners had put in an appearance and voted enthusiastically against the Act. But unfortunately they did not discuss what steps they should take in the position thus arrived at. The very next morning advertisements appeared, I am told, in 17 newspapers for whole-time medical men. A hurried meeting was convoked for the next Monday evening. By that time it was believed that from 40 to 50 whole-time men were ready to come to Bradford. Such an importation could hardly fail to damage the general practitioners of the town seriously, while it would injure the consultants and also interfere seriously with the employment of the nurses. Everyone connected with the medical profession felt the seriousness of the position, for no provision whatsoever had been made in anticipation of such a course of action. Halifax, Doncaster, and Leeds were already giving way at the time, and it may be said that resistance would have been too late. I do not think so. If Bradford had held out a large number of practitioners would have followed its example. The unexpectedness of the move at Bradford was the cause of its success, but it should not have been unexpected. It does not seem to have been realised that as Bradford was one of the best organised medical centres the Government would probably take special measures to break down resistance there. The special measures of defence which should have been employed were wanting.

The Rally of the Profession.

With no fighting plan of action, in spite of their strength and unity, the practitioners of Bradford yielded and went on the panel. To-day in the Bradford municipal area only 16 general practitioners are not on the panel. Then there are also a good many practitioners on the Bradford panel who do not live in the town, while the profession complains that it has been intimidated. It is curious to note that there is a large proportion of young practitioners at Bradford not in new practices, but young men who have succeeded to old-established practices, and they are as strongly opposed to the Act as their seniors. The Bradford practitioners not only feared the competition of the whole-time men it was proposed to import, but they thought this might very well be the beginning of a State medical service. This impression was confirmed from more than one source. At the town-hall some of the authorities seemed quite disposed to start a State medical service. When they advertised for whole-time medical practitioners they obtained in three days three times more applications than they needed, and there are now actually 130 doctors on the panel. The population of Bradford has by this time probably reached the figure of 290,000, and there were 116,000 insured persons, of whom, last June, 105,000 had selected their medical attendant. Nobody was allowed to contract out. Nor would the Insurance Committee entertain for one moment any proposal to establish a wage limit, because they felt that a wage limit would remove the best patients from the working of the Act and thus create or accentuate a difference between the panel and non-panel doctor. As a matter of fact, many insured persons at Bradford prefer to pay full fees and go to a non-panel doctor. This is a tendency that encourages the organised members of the profession. Though beaten in so far that they had to accept the Act unwillingly, the medical men are again beginning to feel strong and united. The Local Medical Committee, which is largely composed of the same practitioners as those nominated by the British Medical Association as a Provisional Committee, are working well together against further extension of contract practice.

Inequalities in Contract Work.

Calling on some of the leading local practitioners and those who have taken a prominent part in the recent agitation, I was at once greeted with the assertion that whereas the Act often meant double the amount of work it never meant double the amount of pay. Thus, one of my informants had 1370 insured persons on his list; of these, 285 called upon him in less than two months after obtaining their cards. The rules of the various Friendly Societies constituted a great difficulty in working the Act. For instance, a woman is set down as suffering from bronchial catarrh, but does not recover within the period such a form of illness is supposed to last. Thereupon, and without consulting her medical attendant, she is told by letter to return to her work and threatened with penalties if she fails to do so. Consequently her medical attendant has to make various protests, write letters, and lose a good deal of time to protect his patient from premature return to her duties. I take a female example, but I had others of each sex quoted to me. No allowance, of course, is made for all this extra trouble. When the Act came in force not half the local practitioners had clubs. Nor did the people themselves attach much value to the medical service provided by the clubs. They preferred making their own arrangements with a practitioner whom they themselves had selected. Indeed, I was assured that the secretary of a Bradford club had declared that 70 per cent. of applications for sick benefits were not signed by the club doctor, but by private practitioners to whom the members had paid the usual fees, so that at Bradford it is easily demonstrated that neither patients nor practitioners desired the vast extension of contract practice created by the Act.

Then the Act works very unevenly, varying according to the economic conditions of each district. A panel doctor explained to me that he had two more or less working-class

districts, but one is better than the other. He divided the work with his partner as equally as possible so far as the number of persons insured is concerned. Yet in one of the halves there is more than twice the amount of work to be done for half the number of insured persons. As the more recently a person has been insured the more likely he is to seek advice, the number of visits may not remain so high—indeed, the novelty of the thing has now worn off. Too much anticipation of lighter times would be premature, however, for many insured persons who did not at first like the idea of consulting their panel practitioners are beginning to get reconciled and avail themselves of the facilities of obtaining medical advice. Of course, the mental attitude of the public is comprehensible. At first many parents objected to sending their children to State schools, but to-day they send them readily enough. Financially the difference between the two districts worked by the medical firm, each partner having the same number of insured persons, was that the average remuneration amounted to 1*s.* 6*d.* per item in the best district and to only 9*d.* in the worst district.

Spring Cleaning and Malingering.

The Act has greatly and unfairly inconvenienced some well-established practitioners who have their fixed habits and practice and do not want to change. In order to retain their old patients they must put their name on the panel, for the class of the compulsorily insured cannot be expected in any real bulk to pay for the luxury of a private medical adviser in addition to their contribution under the Act. But once their name is set down they are drawn into the vortex of the Act and forced to undertake practice of a sort that they did not contemplate.

The question of malingering was much discussed with me, and I came to the conclusion that although the offence undoubtedly existed, some of the efforts of societies to meet it and to avoid the perils of bad lives have been unfortunate. There is, for example, a thrift society in Bradford, and one patient who came on their funds was discovered to have been ill before this society was formed, and was therefore told she must change her society. But this could only be done with great difficulty. The excuse given is that the patient concealed the illness. In the meanwhile, she has paid her insurance money and insists on receiving medical attendance. The Prudential Society asks what illnesses have occurred during the previous five years—a most legitimate question on the part of a private commercial insurance speculator, but having nothing to do with a national insurance scheme. Another case was mentioned of a patient insured through the Prudential Society. A stranger called and examined her chest and went away without making any reference to the patient's own doctor. Technically speaking, this might be considered as an assault. There was not even any proof that the stranger was a qualified practitioner.

Some of the societies are said to try to bluff people out of their claims, and this causes many complaints and makes the Act unpopular. Thus a woman was told to take her name off the sick list because she had been seen standing on her own doorstep. It is true that a great outcry has been raised concerning the prevalence of malingering among the women who work in the mills of Lancashire and Yorkshire. It was discovered that a large proportion contrived to fall ill just about the spring-cleaning time. Never before, I was assured, in the whole history of Bradford, has the spring cleaning been so thoroughly and well done. The Act in this way may have helped to raise the standard of cleanliness in the homes of many mill and factory workers, but that was not its purpose, nor is the result a good one economically. The trouble is that if a patient declares she has a pain in the back it cannot be said that this assertion is untrue, though it is remarkable how many vague symptoms appear during the spring-cleaning season. Perhaps there is not much real malingering that can be proved, but there is a tendency to make the most of opportunities for falling sick.

Heart Disease and Certificates.

The inscription on the certificate of the nature of the illness of the insured person is the cause of many difficulties and complaints. Thus in the ordinary course, and outside of the Act, if a person wants to take out a life insurance, it may happen that he has aortic disease. The doctor of the insurance company is careful not to tell him what he has discovered and simply advises the applicant to see his own private physician. But at Bradford an insured person is put on the sick list for bronchitis—he is, however, also suffering from aortic disease. Another man has lumbago, but when examined the panel doctor detects a bruit. When can these men be allowed to return to work? When the bronchitis or the lumbago is cured. But to send them back to work may prove to be a death sentence. There is a case now of a man with aortic disease who, in the mill where he works, has to carry warp beams. These are very heavy and may kill him at any moment. If there is a coroner's inquest, the doctor will be blamed for not having declared there was heart disease. But if the panel doctor, as he would be called upon to do, writes on the certificate that there is heart disease, he imperils the man's peace of mind and prevents his getting further employment. The insurance companies have nothing to gain by knowing, and as for statistics, the panel doctors are not aware that it is their business to provide statistics. It would simplify matters very much if the panel doctors were merely to certify that the patient is incapacitated from work without giving any details. To this suggestion, however, the Insurance Commissioners have replied that they had no power to override the rules of the Friendly Societies, who could do what they thought best here.

Sanatorium for Tuberculosis.

There is considerable controversy at Bradford in regard to the question of constructing a sanatorium for tuberculosis treatment. Before the National Insurance Act came into force the Health Committee of Bradford had taken measures, and this organisation, created by the municipality, is to work conjointly with those who deal with tuberculosis under the National Insurance Act. But the municipality want to build well and erect a sanatorium that shall be a credit to the town. The Local Government Board is bound to look at economy. At Bradford it is urged that if the sanatoriums are too simple and too cheaply built patients will not stop in them, and there is no power to retain them. The plans of the Bradford municipality raise the cost to £300 per bed, and the Local Government Board want estimates at about £100 per bed. Of course, the greater number of beds provided the better it sounds in a speech or official statement, but this is not the view taken by those who are concerned with the welfare of the patients at first hand. We have at Bradford materials for a sharp contest between the advocates of many cheap beds and the advocates of fewer beds, but much better accommodation.

(To be continued.)

MOTORING NOTES.

(FROM A SPECIAL CORRESPONDENT.)

Chauffeurs, Mechanics, and Grooms.

THE question is often asked which of these three classes is the best for a medical man to employ; that is, for one who has not time or inclination to be his own driver. Of course, if a stud of cars is kept, the question of a mechanic to keep all the cars and drivers in order is worth considering. But for a man who only has one car and wants that to be turned out spick and-span day in and day out, I question much if he will get as good a result with the mechanic as with the groom or ex-coachman. The mechanic may be able to do more complicated repairs than the groom, but are they wanted? And if they are, can they not be done more cheaply and better at a repairer's? Beyond, perhaps, changing a sparking plug, removing a petrol jet, grinding a valve, adjusting a tappet, filling up grease cups, oil tanks, and petrol reservoirs, the modern car seldom needs much repairing, and the average coachman can soon be taught to do all these things. Another advantage in favour of a coachman is that undoubtedly he is a better carriage cleaner than a mechanic. I know many doctors who have had their former coachmen trained, and who find them to be most excellent chauffeurs, and quite able to do all running repairs. The other repairs are much better carried out at a workshop, and they can usually be done when the car is overhauled annually. To keep a man who cannot polish the car, simply because he might, if he had the machinery, rebore the cylinder, seems an absurdity. I have not mentioned the question of tyres, because a groom, after a few hours' instruction, can change tubes and covers as well as any mechanic.

The Sampson Inner Tube Repair Kit.

This kit consists of a cutting and expanding tool and plugs designed to keep the edges of a puncture permanently together and closed. The plugs consist of two discs, one of which is placed inside the tube, the other outside. By turning the stem which connects the two portions of the plug these are clamped together, covering the edges of the whole with equal pressure. The wire stem is then snapped off level with the metal portion of the cap. When more than one puncture occurs in a day the stock of spare tubes is liable to run short. To affix an ordinary patch takes some time, and for such emergencies this device can be strongly recommended as a satisfactory means of rapidly repairing an inner tube. The plugs cost 6*d*. each, and the kit complete, with cutting and expanding tool, costs 12*s*. 6*d*. It can be obtained of Messrs. Brown Brothers, Limited, of Great Eastern-street, London, E.C., who have lately issued their Motor and Tool Catalogue for 1913.

The 14-18 h.p. Adler Car.

This make of car is one well known in Germany, where large numbers of taxi's are turned out by this firm; and it has an equally good reputation on this side, where it is stocked by Messrs. Morgan and Co., 10, Old Bond-street, London, W., and 127, Long Acre, W.C. Recently I spent an afternoon in putting one of these cars through its paces. The road through London to Harrow and over the bad Harrow Hill, as well as up and down that unpleasant incline from Northwood to Rickmansworth, formed part of the route chosen. As a result I found the car satisfactory in every respect. The clutch is of the inverted cone type, engages very gently, and is easily operated. The gearbox provides four speeds forward and a reverse, and the final drive is by a cardan shaft through a hollow torque tube to the usual type of crown wheel back axle. The four-cylinder engine has a bore of 75 and a stroke of 120, and the ignition is by an Eisemann magneto with an automatic advance, so that the point at which the spark occurs suits itself both to high and low speeds. A welcome innovation in the Adler is the introduction of a foot control. The car appeared well suited to the needs of a medical man, and especially to an owner-driver who desires to keep his machine in running order himself.

Self-Starters.

Personally, I think that the actual time and exertion taken in starting a modern engine is so infinitesimal that the necessity for such a device as a self-starter is open to question; but, without doubt, it is convenient, especially in rainy weather. There are a good many on the market—some working by electricity, others by acetylene gas, and others by compressed air. Probably the latter form is the simplest, and a very good type is the Umotca compressed air engine starter which is sold by the Union Motor Car Company, of 19, Denbigh-street, London, S.W. It consists of a four-barrelled pump which can be driven off the clutch or cam shaft, and supplies air, at 200 lb. pressure, to an air reservoir. From this reservoir it can be taken when needed to each cylinder by means of a distributing valve, and thus the engine is started. In addition an arrangement is so made that the compressed air can also be used for inflating tyres. This appliance seems simple, works satisfactorily, and can, I think, be safely recommended to those who do not wish to have the trouble of pulling their starting-handle round. Whether this freedom from what is, after all, but very little exertion is worth the price charged, is, of course, a matter of opinion. Of the electric type of self-starter one of the most excellent is fitted to the Cadillac cars.

The Decarbonising of Engines.

However good the lubricating oil may be, there comes a time when carbonised oil is deposited in the cylinders, and this, after the engine has been running for a little while, may become incandescent, with the result that the mixture explodes before it is properly compressed, so that power is lost. If a good oil is used in moderation, and care is taken to run the engine with a sufficiency of air, this condition should not arise for a long time, but after prolonged running it will occur. The treatment formerly was to take off the cylinder covers and scrape and clean the pistons, rings, and covers, and the job usually took not far short of three or hour hours to perform. As an alternative to this various preparations were sold which were said to remove the deposit. As a rule these were not satisfactory, but, as previously mentioned in this column, a novel method has during the last two years come into vogue, which consists of burning, and thus removing the deposit by means of a small pilot jet fed with oxygen. This method has been introduced by the Internal Combustion Engine Company, Limited, of 3, London Wall Buildings, London, E.C. They have issued licences to a large number of garages to carry out their procedure, which is both speedy and efficient. It can be finished off under the hour.

Braking and Descending Hills.

It is by the careful descent of hills that the life of the tyres, and the engine as well, can be greatly prolonged, and I write now in reply to letters. It is generally accepted that the best procedure is to descend with the engine throttled and the clutch in, with the first or second speed. By this method the brakes are not used, but are ready in case of emergency, and the car is always completely under control. Of course, if the hill is very steep, the ignition can be cut off, and if an extra air valve is fitted to the inlet pipe even the little waste of petrol is obviated and, what is more, the engine is cooled. To drive down on the brakes merely means wear of brakes and tyres. The only point to remember is this, that it is not easy to change down gears when on the hill, and that it is better to stop at the top and slip in the first or second speed than to run the risk of damaging the gears by trying to do so on the hill.

The Use of Benzole.

As mentioned previously in these notes benzole can be used as a substitute for petrol. With the present price of petrol this substitute is becoming more and more popular, and provided that plenty of air is mixed with it, it is just as satisfactory as petrol, giving equal power and mileage. It does not cause sooting of the engine, so long as an extra air inlet is fitted to the intake pipe. It can be obtained at a good many garages and at most of the depôts of the South Metropolitan Gas Company, as well as the Gas Light and Coke Company. Occasionally in cold weather there may be a little difficulty in starting with benzole. Those who do not like cranking, as an exercise, can obviate this by dropping a little of an equal mixture of petrol and ether into the cylinders, when they will start with merely one turn.

A New Valve-grinding Preparation.

A good many valves are, in my opinion, ground when they do not require it; but after an engine has run some 3000 or 4000 miles it is usually as well to grind the exhaust valves, or at least to see if they are pitted and thus need treatment. Some form of emery is usually employed, and this has to be mixed with a little oil, and there is always the danger that it may work itself away and get where it is liable to do damage. To obviate this the Clover grinding compound has been introduced. It does not contain emery or grit, is of uniform consistency, and cannot do any harm.

Tyre Valve Plungers.

A very common cause of the deflation of a tyre is the bending of the valve plunger, and thus the pin may jam, and the mushroom end not make a perfect joint. It is, therefore, a good plan always to carry some spare plungers, and when a tyre goes flat to remember that it may be due to a leaky valve, and not to diagnose a puncture until having eliminated the first possible cause.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Welsh National Memorial.

A MORE or less complete record of the work already accomplished by the Welsh National Memorial Association is contained in the first report of the association. The objects of the association as stated by its founder, Mr. David Davies, M.P., are to "concentrate the patriotism of the Welsh people on the extermination of a disease which is preventable and curable, and by so doing to commemorate the life and work of King Edward VII." With this end in view an educational campaign was entered upon three years ago with vigour, and by means of a tuberculosis exhibition and by a scheme of lectures in all parts of the country an initial step

was taken in impressing on the public generally the importance of the question. Later the two existing sanatoriums, one situated in North Wales and the other in South Wales, were taken over by the association, and further sanatoriums and hospital accommodation have been provided, so that there is now accommodation in such institutions for over 800 patients. Included in the scheme is also a dispensary service. The capital fund of the association amounts to £210,000, of which sum all but £22,000 have been actually paid over. In addition, however, to the £6000, which is the income of this capital, the association will receive from the Treasury under the National Insurance Act £28,000, from the county councils and county borough councils of Wales and Monmouthshire £22,000, and a further £3000 from the Government, a total of £59,000. The estimated expenditure of the association for the year is £81,000, which includes £37,000 for hospitals, £19.000 for institutes, £18,000 for sanatoriums, and £7000 for administrative expenses. This excess of expenditure over assured income is causing some concern, for it is thought in some quarters that the deficit may have to be made up out of the local rates. Although the medical officers of health of several county councils and county boroughs at the outset were reluctant to hand over to the association the carrying out of duties which they considered should be performed by themselves, only one county council —that for Pembrokeshire—has yet shown any desire to administer the sanatorium benefits of the National Insurance Act rather than hand over its obligations to the association. Dr. H. Owen Williams, the county medical officer of health of Pembrokeshire, has given some very good reasons for keeping the administration within the county, and his proposals have received a good deal of support.

Cardiff Garden City.

Although the first sod was cut only in March last of the garden city at Rhubina, Whitchurch, near Cardiff, a great deal of progress has been made in the enterprise. The scheme is being carried out by the Cardiff Workers' Co-operative Garden Village Society, which proposes to develop a large estate on co-partnership lines. In the first instance 34 houses are to be erected, of which several are completed, but it is hoped that eventually there will be 300 houses on the estate which has an area of 30 acres. The streets are being arranged and the houses planned so as to secure sunlight to the living rooms. The roads are planted with trees and are bordered with grass strips. Parts of the estate are being reserved for churches, schools, and other public buildings, and playing fields and bowling greens will be made.

Cardiff Hospital.

The recently issued annual report of the King Edward VII. Hospital, Cardiff, is a record of largely increased activity in connexion with an institution that was established in 1837, in which year 42 in-patients were treated and about 1000 out-patients at a cost of £760. In 1912 there were 2700 in-patients, nearly 20,000 out-patients, and the expenditure was over £18,000. The number of beds now available is 270, but 50 of these are not yet in use owing to the necessity for providing an increased annual income for their maintenance of about £3500. It is of interest to note that during the present year the sale of roses on Alexandra Day secured nearly £1000 for the hospital. During 1912 there was established the Cardiff and District Hospital Society, which has for its object the encouragement of systematic contributions amongst all classes of working people of a penny each per week. The regulations of the society provide for the erection and maintenance of convalescent homes to supplement the work of the hospital. Another useful agency connected with the hospital is the Samaritan Fund, the object of which is to assist necessitous in-patients who have recovered from an illness, but have not regained their strength, to go to work again. Food and milk are supplied to some patients for a few weeks, and others are sent to convalescent homes.

The Barnstaple Board of Guardians and the Ilfracombe District.

At the last meeting of the Barnstaple board of guardians it was reported that there was still no applicant for the post of district medical officer for Ilfracombe. After some discussion it was decided to place the whole matter before the Local Government Board and to ask their assistance and help. As already stated in THE LANCET, if the Barnstaple guardians offered an adequate salary the appointment would soon be filled.

The Dartmouth Town Council and the Local Government Board.

The medical officer of health of Dartmouth recently reported upon the unsatisfactory housing conditions in certain parts of the town, and the Local Government Board sent a communication to the council in reference to the matter. The works committee of the council were appointed to consider this letter, and, having done so, recommended that a reply be sent stating that the council did not agree with the medical officer of health as to the insanitary conditions of the houses, and consequently did not see any necessity for providing a scheme for the reconstruction of the houses referred to.

Proposed Public Slaughter-house for Exmouth.

At the last meeting of the Exmouth district council it was decided to instruct the sanitary committee to report on the advisability of providing a public abattoir for Exmouth, and to submit plans and estimates for its erection. It was stated, in opposition to progressive tactics, that at Newton Abbot a public slaughter-house was built two years ago and is now used as a fire station, and at Ilfracombe the abattoir is a source of considerable expense to the ratepayers.

Bridgwater (Somerset) Infirmary.

It has been decided to enlarge the Bridgwater Infirmary as a memorial to the late King Edward VII., and also to commemorate the centenary of the institution. The cost of the scheme will be about £5000.

The Cornwall County Insurance Committee.

The first meeting of the newly constituted Cornwall County Insurance Committee was recently held. It was reported that during the last six months the Cornwall Insurance Committee had paid the medical men of the county the sum of £13,206, and the chemists had received £1750. It was stated that there are still from 8000 to 10,000 persons who have not yet elected their medical adviser. The committee add that, as far as can be discovered, the medical practitioners are quite satisfied.

Sept. 9th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Irish Medical Committee.

THE first meeting of the Irish Medical Committee, appointed by the meeting of delegates held on July 17th as the representative committee of the profession, was held on August 27th in the Royal College of Surgeons, Dr. P. J. Macnamara, of Kilmallock, being in the chair. The medical secretary, Mr. Maurice R. J. Hayes, announced that 27 out of the 32 counties and all the boroughs had nominated their representatives, as had also many of the academic bodies. Though the mode of election is different, the new Committee differs little in *personnel* from the Conjoint Committee which it supersedes. Dr. Macnamara was elected chairman and honorary treasurer, Mr. R. J. Johnstone, of Belfast, vice-chairman, and Mr. Hayes medical secretary. A finance and executive committee was elected. A resolution was passed condemning the post of "medical adviser" as contrary to professional ethics, and the various Irish medical corporations were requested not to appoint any persons holding such post to any office in their gift. A resolution was also carried requesting consultants to make inquiries concerning any practitioners who might invite their assistance as to whether they had accepted any office contrary to the wishes of the profession.

The Apothecaries' Hall, Dublin, and the Appointment of "Medical Adviser."

A curious position has arisen at the Apothecaries' Hall, Dublin, as a result of the disapproval of the profession of the post of "medical adviser" recently created by the Irish Insurance Commissioners. A meeting of the medical profession of Dublin passed a resolution to the effect that no person holding such a post should be elected to represent any medical corporation on the General Medical Council. The proprietors of the Hall a few days later re-elected as their representative on the General Medical Council a gentleman who is one of the "medical advisers" to the Insurance

Commissioners. The election was carried by a small majority. At the same meeting Alderman Dr. J. C. McWalter was elected Governor of the Hall, but he refused to take office, and for some weeks now the Hall has been without a Governor.

Complaint against a Dispensary Doctor.

On July 29th Dr. B. McCarthy, medical inspector, Local Government Board, held a sworn inquiry into a charge preferred against Dr. H. M. Johnston, medical officer of Stranorlar (co. Donegal) Dispensary, by a man who accused him of neglect of duty in the case of his wife, a dispensary patient. The Local Government Board has now written the Stranorlar board of guardians that, on full consideration of the evidence, it was of opinion that Dr. Johnston had acted strictly in accordance with his duty in a very sad case, and that he was completely exonerated from the charge of neglect preferred against him. The Board added that it felt much sympathy with the man on the loss of his wife. At a meeting of the Stranorlar board of guardians on Sept. 1st, at which this communication was read, the chairman said that Dr. Johnston was exonerated from all blame.

The "Medical Adviser" in Belfast.

At a meeting of the Belfast Local Medical Committee held on Sept. 2nd a reply was read from the Irish Insurance Commissioners to the effect that no panel doctor in Belfast was eligible to be nominated for the position of Insurance medical adviser, whereupon the following resolution was passed unanimously:—

That the Belfast Local Medical Committee protest against the stigma of inferiority which the Irish Insurance Commissioners have placed upon those who complied with their desire to form a panel for certification purposes, as shown in the conditions laid down for the appointment of a medical referee for Belfast.

After a long discussion it was agreed that the following names were to be submitted to the Insurance Commissioners, out of which they could select one to act as "medical adviser" in Belfast: Dr. James Colville, Dr. R. C. McCullagh, and Dr. W. L. Storey.

New Medical Deputy Lieutenant for Belfast.

Dr. J. Walton Browne, late senior surgeon to the Royal Victoria Hospital, has been appointed a deputy lieutenant for the city of Belfast.

New Appointments in Belfast.

Mr. J. A. Craig, having been appointed as lecturer on ophthalmology and otology in the Queen's University, in place of the late Dr. C. Shaw, has resigned his position as ophthalmic surgeon to the Belfast Union Hospital, and Dr. Henry Hanna has been selected by the guardians to fill his place. Dr. Hanna has since resigned the assistant surgeoncy to the Ulster (Benn) Eye, Ear, and Throat Hospital, which he has held for some time, and to this position Dr. Isaac A. Davidson has been appointed.

Public Memorial to the late Dr. W. Rutherford, Ballinasloe.

On August 23rd a drinking fountain was unveiled in Ballinasloe as a public memorial to the late Dr. Rutherford, who practised in that town for over 39 years prior to his death in 1911. In that period he earned the respect and affection of his neighbours over a wide country-side.

Sept. 9th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

New Method of Treating Erysipelas.

Dr. d'Andia, a French medical practitioner in India, has made public a new treatment for erysipelas which is certainly not without originality. During the last year or two several medical men have suggested obtaining complete asepsis by the use of a hot metallic application. Dr. d'Andia finds that good results can be obtained with the assistance of a hot iron, which he passes over the faces of erysipelatous patients. The technique is as follows: The iron, having been warmed over a spirit lamp or on a brazier, is brought by the medical man against his own cheek, or can be placed over drops of water whose more or less rapid evaporation will indicate the approximate degree of the warmth of the iron. A piece of red woollen stuff (the colour is not without importance) is then placed over the erysipelatous place, and the iron is applied, making it glide softly over all the affected region. The process is repeated several times, special attention being paid to the edge of the erysipelatous plaque, which edge, it may be remembered, is always in slight relief. Corresponding with the tolerance of the patient the iron is passed over the affected area from five to ten times in the space of a few minutes. The first sensation of the patient is diminution of pain, the skin is less tender, less sensitive, redder, and the vaso-dilatation which this implies is of good omen. The hot iron acts as an anæsthetic and determines the blood to the region. Dr. d'Andia recommends for preference the use of a small iron; the one which he has repeatedly used is the same as that employed for ironing hats, and is very convenient, because as a rule in these irons the handle is attached with a bayonet joint, allowing the surface of the iron to be placed in any plane that will obtain contact with different points, as, for example, with the root of the nose or with the region round the lobules of the ears. The red woollen stuff is valuable, first, because as a bad conductor the wool retains the heat of the iron for some time while protecting the skin against too much chemical action, and, secondly, because the red colour appears to have a valuable action on some cutaneous lesions, results alluded to as "phototherapeutic" and analogous to those following upon the application of red light.

Physiological Effects of Asphyxiating Bombs.

The police being face to face with the treatment of desperate resistance to the action of the law when attempting to raid the headquarters of bandits and aliens, have been embarrassed by humanitarian protests against armed attacks upon these places. They have now decided in such circumstances to employ asphyxiating bombs (so-called) for the reduction of what are often fortified buildings held by these reckless criminals. Dr. Briand has recently related a case showing the effect of the projectiles. A patient under the influence of very vivid hallucinations for several hours fired off a revolver at all who approached him. On being squirted with the suffocating liquid intense lacrymation was provoked, obliging him to hold his eyes shut, while he was embarrassed by a nasal discharge. He then had a sensation of suffocation, driving him to the window to obtain his breath. In a few seconds the air of the place in which he had barricaded himself, revolver in hand, became suffocating and irrespirable, and his capture was easy. The sequel was as follows. Examination of the eyes showed nothing. The irritation of the mucous membrane had produced no bronchitis, however slight.

Resection of the Left Lobe of the Liver.

At the last meeting of the Société de Chirurgie M. Walther showed a young man, aged 21, from whom he had removed on June 23rd the entire left lobe of the liver for a large tumour presenting all the characters of an adenoma, and confined entirely to that lobe. The resection through the healthy tissue was easily accomplished by means of imbricated U-shaped sutures with No. 3 catgut. The surface of the liver corresponding to the tumour was about 21 cm. in length, 14 cm. wide, and from 9 to 10 cm. in thickness. The tumour when emptied of blood weighed 580 grammes, and proved to be a lobulated (*parcellaire*) hypertrophic cirrhosis. The patient did well. He showed a normal amount of urea.

A Fixation Abscess as a Means of Treating Mushroom Poisoning.

Having observed for many years numerous cases of phalline poisoning from mushrooms, Dr. A. Pic, professor of therapeutics at the Faculté de Médecine de Lyon, conceived the idea of applying Fochier's method in those patients who survived the first symptoms. The toxic agent, the phalline of Kobert, is a toxalbumin which behaves in the main like a microbic toxin, and in the pus of fixation abscesses are sometimes found the microbes that have given rise to the disease for which this therapeutic measure has been employed. Moreover, toxic substances, such as lead or mercury, are also at times found in the pus of abscesses in those suffering from lead or mercurial poisoning. With these facts in view, he thought that phalline also might be similarly localised. Out of 23 mushroom-poisoned persons treated in this way, M. Pic had only nine deaths, giving a mortality of 39 per cent. in place of 86·8 per cent., the present ordinary figure (for out of 38 cases of phalline poisoning recorded in France of late years 33 proved

fatal). M. Pic, with M. J. F. Martin, an interne of the Hôtel Dieu of Lyons, has communicated to the Société Médicale des Hôpitaux of that city a fresh case of poisoning by mushrooms of the family Amanita phalloides, which was treated successfully by this method, though the gravity of the symptoms seemed to promise a certain fatal issue. The following treatment from the time of admission to hospital resulted in a cure. Emetics were first given (though it must be remembered that as the symptoms are often delayed until after the mushrooms leave the stomach emetics are not necessarily of service). For four days the patient received twice in the 24 hours injections of 300 grammes of physiological saline solution with a view to securing lavage of the blood and counteracting hæmolysis. He was also given hot sedative rectal injections, as well as baths at 98° F. for ten minutes three times a day. Finally, to support the heart subcutaneous injections of camphorated oil were administered. But these measures were purely symptomatic, and in similar cases have always proved insufficient, so that the cure in this case must undoubtedly be attributed to the fact that on admission a fixation abscess was made. The efficaciousness of this procedure is further supported by the fact that on the day in which fluctuation was observed in the region of the abscess a change took place in the patient, with a urinary crisis and a rapid subsidence and ultimate disappearance of all the morbid phenomena. It constituted a veritable crisis corresponding with the fixation abscess.

New Technique for the Discovery of Foreign Bodies.

M. Miramond de Laroquette has communicated to the Academy of Sciences a new technique for the discovery of foreign bodies in the human subject. The site of the body is first determined horizontally and as to depth upon the same plate, and under a cruciform metallic marker, of which the arms, graduated in centimetres, embrace in one of its divisions the image of the foreign body. The findings of the print are recorded on a tracing quartered after the original model, which is used in each case, and on which is marked the horizontal and deep situation of the foreign body as recorded by the marker. The metallic marker, whose place has been marked on the skin, serves as the centre for a small circle, which placed on the tracing serves as a practical guide to the discovery of the foreign body. The proceeding is simple, and rapid and easy of execution. By it we can determine in less than an hour the exact site of the foreign body and act immediately, which is highly important, seeing the displacement which foreign bodies may undergo in the tissues. The preparations are reduced to a minimum, and the accuracy of the method has been demonstrated by actual experience, projectiles, needles, &c., having been discovered deeply situated in various regions of the body and safely extracted both at the civil and military hospital of Algiers by M. Curtillet, M. Cochez, M. Ferrari, and M. Gerschet.

Sept. 8th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

The Cocaine and Morphia Habits in India.

THE general public has little idea of the extent to which the cocaine and morphia habits have grown in Rangoon, and of the misery of the most squalid and repulsive type to which it reduces its thousands of victims. In spite of the efforts of the police and excise departments the smuggling of these two drugs continues on a large scale. Large seizures and numerous prosecutions are of daily occurrence, yet no appreciable benefits are apparent, and without exaggeration it may be said that for every grain seized a pound reaches the purveyors and consumers, and that the real smugglers, who are trading in the life-blood of their brothers, are never reached. Practically the whole of the cocaine and morphia that makes its way into Burma is manufactured in Germany, and it is felt strongly that efforts should be made to secure an international agreement to restrict the manufacture of these drugs in quantities in excess of that required for *bonâfide* medicinal purposes. The whole question is full of difficulties, but it should not be impossible to discover a solution of the problem. If an international agreement can be arrived at the manufacture of these drugs might be made Government monopolies in all countries, thus bringing the sources of supply under control.

Quack Medicines in India.

A leading Indian daily newspaper has lately published a strong note on the subject of quack medicines. It points out that the popularity of patent medicines among the town populations of India is amazing, and large fortunes are made by the vendors. Vernacular and other newspapers are flooded with advertisements, backed up by preposterous testimonials. While some of the quack remedies thus thrust upon public notice may be harmless enough, there are others which are quite the reverse. Major F. N. Windsor, I.M.S., chemical examiner to the Bengal Government, in his annual report refers to a case of sulphuric acid poisoning in Calcutta which illustrates this danger. An adult Bengali, complaining of dyspepsia, took a small quantity of a patent medicine called "extract of jambulin." He became so ill immediately afterwards that he had to be removed to hospital, where recovery took place after treatment. On analysis the "extract" was found to consist of a strong solution of commerical sulphuric acid. On previous occasions the same patent medicine had been analysed by Major Windsor with a similar result. The chemical examiner's report also notices four cases of cocaine poisoning.

Sanitation in the Punjab.

A valuable report on the sanitary administration of the Punjab by the Officiating Sanitary Commissioner, Lieutenant-Colonel S. Browning Smith, I.M.S., has led to some interesting comparisons being instituted, in the review of the report just issued by the Punjab Government, between the vital statistics of East and West. It is remarked that while in the previous quinquennium the death-rate in the Punjab was 42·7, it was in 1912, despite a severe outbreak of small-pox, only 26·63. The latter rate, it is pointed out, is lower than the rates in Spain, Hungary, and Russia during the decade ending 1904, but it is still far above the rate for the United Kingdom, which has now fallen to about 14. The death-rate in 71 towns of over 60,000 inhabitants in the United Kingdom in 1911 varied from 47·1 to 20 (Liverpool). The rates in Cork (21·2) and Dublin (21·4) were slightly higher. In the Punjab there are only three towns of this size—Lahore, Amritsar, and Multan, where the death-rates were 28·54, 38·33, and 26·23 respectively. These are the figures of a healthy year, and compare favourably with recent rates in the same three cities. The infantile mortality rate in the Punjab in 1912 was 210·44 for males and 201·13 for females. Here, again, comparison with Western figures is interesting. In the decade ending 1904 the rate in England was 150, in Prussia 198, in Bavaria 257, in Russia 268, and in Saxony 272. But the rates in the Punjab have been much higher in the recent past, and the average in the four years ending 1904, when the plague epidemic was very violent, was 304 for males and 335 for females. The conclusion drawn from a consideration of these statistics is that the Punjab in a favourable year is healthier than several European countries, though it still falls a long way behind the most advanced. One of the problems before the province, the resolution points out, is the elimination of the epidemic. "It is that which is the disturbing factor in our death-rates."

The Central Research Institute.

Major W. F. Harvey, I.M.S., has been confirmed in place of Colonel Sir David Semple as the head of the Central Research Institute at Kasauli. Captain J. W. McCoy, I.M.S., will join the bacteriological department in place of Major Harvey.

August 9th.

THE INSURANCE RECORDS AND POLICE PROCEEDINGS.—A notice has been received by various public and police authorities dealing with the position of the police in regard to the insurance records. The notice signifies the decision of the Cabinet on the important point as to whether the addresses of insured persons should be disclosed to the police, who have hitherto not had access to this information. It is now decided that in special circumstances the insurance officials may afford the intelligence to the police upon the authority of the responsible Minister. This means that a good cause being shown—for example, the need of tracking some criminal dangerous to the community—the Insurance Commissioners may themselves supply the police with the information, the communication of which it would certainly be unwise and unsafe to allow through the unsupervised medium of insurance officials.

Obituary.

ANDREW CLARK, D.Sc. Oxf. (Honoris Causâ), F.R.C.S. Eng.,

KNIGHT OF GRACE OF THE ORDER OF ST. JOHN OF JERUSALEM; COLONEL, A.M.S. (TERRITORIAL FORCE); HONORARY SURGEON TO H.M. THE KING; CONSULTING SURGEON TO THE MIDDLESEX HOSPITAL.

IT was with much regret that we announced last week the death of Mr. Andrew Clark, which occurred on August 29th at the age of 66. He was the son of Mr. Benjamin Clark, F.R.C.S., and was educated at a private school, receiving his medical education at University College and Middlesex Hospital medical schools. He became a Licentiate of the Society of Apothecaries in 1868, a Licentiate in Midwifery in 1870, a Member of the Royal College of Surgeons of England in 1869, and took the Fellowship of that College in 1873. He served the office of obstetric assistant at University College, and of house surgeon at the Middlesex Hospital, and later became surgical tutor and subsequently lecturer on surgery at the latter hospital. He was appointed assistant surgeon to the Middlesex Hospital in 1871, and full surgeon in 1895; unfortunately, owing to ill-health, he was obliged to retire from the acting staff, and was elected consulting surgeon in 1908. He was also surgeon to the St. Marylebone General Dispensary, and continued on the committee of that institution until the time of his death. He was for many years the London surgeon to the All Saints' Convalescent Home at Eastbourne, and was in addition consulting surgeon to St. Saviour's Hospital, Osnaburgh-street.

Andrew Clark took a most active part in the work of the British Medical Association, of which he was elected one of the Vice-Presidents. In recognition of the services he had rendered to the Association he was awarded its gold medal, and in connexion with the same body received the Doctorate of Science at Oxford. He was one of the senior officers in the A.M.S. (Territorial Force), in which he held the rank of colonel. He was Knight of Grace of the Order of St. John of Jerusalem and honorary surgeon to the King. Amongst his literary works he issued the Middlesex Hospital Surgical Reports in 1872-73-74, and published some "ambulance" lectures in 1888. He was editor of the fourth edition of "Fairlie Clarke's Manual of Surgery."

At the Middlesex Hospital his death will be greatly regretted. He was universally esteemed by all with whom he had come into contact during his long service at that institution. His kindly manner and the interest which he took in everything connected with the hospital will long be remembered. Especially will his loss be felt by the members of the Middlesex Hospital Club, of which he had been treasurer for 30 years, and for a long period had been secretary also. He was a most regular attendant at the annual dinner, and the reception which was always accorded to him demonstrated the warmth of the affection felt towards him.

Mr. Clark married the daughter of Mr. Joseph Hargreaves, of Liverpool, and her sympathetic personality has endeared her to the large medical circle with which Mr. Clark was so intimately associated. He leaves a son and five daughters. The funeral took place at Folkestone, and a memorial service was held in the chapel of Middlesex Hospital.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Preiser, a well-known Hamburg surgeon whose specialty was orthopædics.—Dr. Borne, senator of the Doubs.—Dr. V. Fossel, extraordinary professor of the history of medicine in the University of Gratz.—Dr. E. von Balz, formerly professor of clinical medicine in Tokio University.

Correspondence.

"Audi alteram partem."

PELLAGRA AND DRUG INTOXICATION.

To the Editor of THE LANCET.

SIR,—I have for some time past taken considerable interest in the question of pellagra in England, and I congratulate Dr. G. S. Blandy on his excellent contribution in last week's issue of THE LANCET. The occurrence of this disease in England, where maize is not a staple article of diet, is a matter for much surprise and discussion. Tanzi states that in Italy only 4 per cent. of pellagrous cases are confined in asylums. Does it not seem somewhat extraordinary that most of the cases recorded in England have been inmates of these institutions? May I dare to suggest that some of the cases of suspected pellagra are an intoxication by, or idiosyncrasy for, certain sedative drugs which are in common use. My chief, Dr. F. R. P. Taylor, tells me that he has frequently met cases which were indistinguishable from those which have been described as pellagra, the potent element in these cases being sulphonal.

During my own somewhat limited experience of asylum work I have seen cases which under the influence of 20 to 40 grains of trional per diem, given at intervals, have shown that typical pellagrous rash on the backs of hands and on the wrists and face. In all cases this condition has been symmetrical and was on several occasions accompanied by diarrhœa, some emaciation, and in one case by anæsthesia of lower limbs. Exposure to the sun certainly did occur in some cases, but in no case has this condition arisen where the patient has been taking drugs other than trional or sulphonal. In one particular case, knowing that trional produced this condition each spring, we used bromides and chloral as necessary sedatives, with the happiest results. I should be extremely glad to learn the experience of other alienists as to the frequency of such cases in their asylums.

I am, Sir, yours faithfully,

W. REES THOMAS, M.D. Lond., M.R.C.P. Lond.,
Senior Assistant Medical Officer and Pathologist,
East Sussex Asylum, Hellingly.

Sept. 9th, 1913.

NATIONAL INSURANCE ACT CERTIFICATES.

To the Editor of THE LANCET.

SIR,—The Insurance Commissioners have issued to the societies and the medical profession draft forms of certificates to be employed under the National Insurance Act. It is impossible to allow these forms to pass into common use without criticism and protest. In the first place, the insured public have a right to demand what the Commissioners mean by "specific disease." All members of the profession know what that term meant originally in correct scientific language; they know also that it has, for convenience and the preservation of secrecy, been for years used in out-patient nomenclature as a synonym for syphilis. In which sense do the Commissioners employ it? If they mean merely a "disease" (or the syndrome which medicine is forced in most cases to define as a disease) let them say so and leave the word "specific" out. Do they mean, as it is probable that they do mean, to accentuate the point that the unfortunate medical man is bound to take all risks in common law and certify to a defamation of character? For it is a defamation of character to say that any man or woman has a venereal disease and leave them to explain how they got it. Or do they use the word in a sense grotesquely pedantic for such a widespread document, and intend to include gonorrhœa, syphilis, acute rheumatism, diphtheria, and all the other diseases scheduled by Act of Parliament in the catalogue of the Royal College of Physicians. If the latter is the intention of the Commissioners the employment of the word can only be called unfortunate or the result of ignorance. If the word is deliberately employed to include venereal disease, it is a poor compliment to the insured

population to give the phrase such a prominent place in the now copious literature of the National Insurance Act. It may be feared that the explanation of this word from panel doctors, which must necessarily occur in the next few years, will engender a pleasant feeling among the insured classes towards an office not highly popular already. It is an outrage to suggest that "specific disease" claims the first place in the catalogue of disablements which place the poor worker on the shelf. The fact that a certificate is headed confidential when it is known that it must be handed in to an official, or a number of officials, will not be found in practice to protect medical men from action even if they are handed personally to the patient. It will also become impossible in practice to hand any certificates to any third person, as the refusal in necessary cases to hand them over will in time be interpreted as a slander. The inconvenience which will be caused to the insured public will be enormous, and if every opportunity will be afforded them of realising it the profession cannot be blamed. Another new departure in principle is made in the form of the certificate. The medical man has to certify that he has examined the patient that day, and a case which has recently occurred in the Brighton police court shows clearly that this point will be rigidly enforced. The medical man may perfectly well know that a worker is incapable of work and that he never will be capable of work, but he must not issue a certificate unless he has seen the patient that day. It may be impossible for the patient to visit the medical man, and in that case the man will have to whistle for his money because he cannot get a certificate, or the medical man out of the charity of his heart may have to make a perfectly unnecessary journey of possibly many miles to supply one.

These two points are sufficient to condemn this form entirely, and unless they are withdrawn and some practical suggestions sought from men of experience really cognisant of the working of general practice nothing can be expected but friction and ill feeling.

I am, Sir, yours faithfully,

A. MAUDE,
Chairman, Kent Medical Committee.

Westerham, Kent, Sept. 6th, 1913.

To the Editor of THE LANCET.

SIR,—It appears to me that a great deal of unnecessary consideration has been given to the subject of medical certificates in connexion with the National Insurance Act. Seeing that these are invariably asked for by, and given to, the patient him or herself, or his or her messenger or agent, and never to any other person, where does the difficulty with regard to medical ethics come in? What can it matter whether the phraseology of a certificate is in the first or the third person so long as it is given to the patient him or herself? The fact of his or her having handed over this certificate to a third person does not involve the original signator—i.e., the medical attendant—in any responsibility, legal or ethical. One of your correspondents, while writing upon this subject, somewhat carpingly asks, "How many certificates per member per week is a medical man expected to make out free of charge?" If he had read carefully Circular M.B.I., par. 8, issued to medical men on the panel by the County Insurance Committees, there would have been no need for him to ask this question. It reads as follows:—

> 8. In accordance with the form of agreement signed by the doctor, he will furnish such certificates as are required to be furnished by the insured person in connexion with any claim for sickness or disablement benefit made by him in pursuance of the rules of the Approved Society of which he is a member, and it shall be clearly understood that the terms of the agreement with the Committee do not, of course, require the granting free of certificates in connexion with claims made by an insured person to societies other than the Approved Society of which he is a member under the National Insurance Act, 1911. Such other certificates will, of course, be a matter for private arrangement between the doctor and the insured person.

One initial certificate only, therefore, is required of the doctor for each patient sufficiently ill to claim benefit, and for those only. The weekly, and in some instances fortnightly, signatures cannot properly be called "certificates." All other certificates and signatures are charged for.

I am, Sir, yours faithfully,

W. W. HARDWICKE, M.D. St. And.

Carlyle-square, S.W., Sept. 5th, 1913.

THE EFFECTS OF THE DUCTLESS GLANDS UPON DEVELOPMENT.

To the Editor of THE LANCET.

SIR,—The above subject is attracting so much attention that I may perhaps be permitted to add a postscript to my paper in your last issue. Since it was written I have examined the skeleton of the dwarf in the Museum of the Royal College of Surgeons of Edinburgh, and through the kindness of the conservator have been able more closely to examine the base of the skull. Before the removal of the skull-cap the base, seen through a hole in the vertex, appeared to be normal. But after the cranium had been sawn off and the sella turcica cleansed and measured, it was found that its capacity was quite 50 per cent. more than that of the normal sella with which it was compared.

On the other hand, in a most pronounced case of ateleiosis which formed one of the exhibits at the recent international congress a beautifully clear radiogram (for which I am indebted to the X ray department at the Middlesex Hospital) showed a sella turcica of normal size, though it is true that the posterior clinoid processes were apparently thickened. In this latter respect it resembles a case of ateleiosis (?) described in an interesting paper by Dr. Jameson Evans,[1] in which a sella smaller than usual is apparently encroached upon by a projection of the posterior clinoid processes. In both cases the prominence is within the limits of normal variation. I am, Sir, yours faithfully,

Reading, Sept. 7th, 1913. HASTINGS GILFORD.

THE TREATMENT OF PULMONARY TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—I noticed that the Tuberculin Dispensary League have recently stated that there are 220,000 tuberculous patients requiring treatment in England and Wales, from which they conclude that it is impossible to provide sanatorium accommodation for these people. They also state that they could deal with and cure 70 per cent. of these people at tuberculin dispensaries. They perhaps hardly realise what a crushing condemnation of their methods is implied by these figures. In England and Wales in 1906—I do not happen to have more recent figures beside me, but it is unlikely that the number of deaths has been increased much during recent years—a little less than 40,000 persons died from pulmonary tuberculosis. This number represents a little over 18 per cent. of the number which they suppose require treatment. If their figures are correct it would appear that if these patients were left alone to be dealt with as they have been dealt with heretofore, then about 82 per cent. would survive, and the Tuberculin Dispensary League would be only destroying 12 patients out of every 100, a number which might be largely increased supposing tuberculin be administered carelessly.

There is one other point which I should like to emphasise before closing: the important point to be decided at present is not whether a patient has been infected with tuberculosis, but whether the tuberculosis is causing him to be ill. Finally, it may be better in some cases to not treat cases rather than use a remedy which has such a capacity for evil.

I am, Sir, yours faithfully,

Ayrshire Sanatorium, Sept. 6th, 1913. EDWARD E. PREST.

ENTRIES IN THE MEDICAL DIRECTORY.

To the Editor of THE LANCET.

SIR,—May I draw the attention of your readers to the present circular which the editors of the Medical Directory are sending out. It appears that in order to cut down the size of the volume they are restricting the amount of space allotted to each name, the result being that some "appointments held" or "scientific papers written" are withheld. I believe this was first done in the 1912 issue, but I for my part certainly overlooked it, and I have no doubt many other of my professional brethren did also. I find that any man who can put his name at the head of a few lines of print in one or other of the medical journals is allowed eight entries

[1] Brit. Med. Jour., 1911, vol. ii., p. 1465.

on that head, but that he may only put in three entries of past appointments held. Now, Sir, if I am wanting a doctor in the country to whom I may send a patient I do not look to see what a particular man may have persuaded an easy-going editor to publish, but what his record in his younger days has been, how many and what kind of appointments he has held and still holds—that gives one a far better idea of the experience of a given man than the titles of his papers. We all know how easy it is to write original papers culled from other men's books or brains, and just what value to attach to them; but if a man has done work in his younger days at certain special departments of medicine or surgery we at least know that he is not totally ignorant of the methods of examination of such cases. I am not sure that the editors rigidly enforce the rules they have laid down for their guidance, but I do venture to hope that their most useful publication will not be rendered less so in the future by a continuation of the present practice, and that they will revert to their former ways. It is in the hope of securing this that I venture to draw public attention to the matter, and to suggest that medical men should more carefully supervise the entries under their names when the circular is sent them. There surely must be other ways of diminishing the bulk of the volume than by leaving out the very information the imparting of which is its *raison d'être*. But if that cannot be done, why not let it grow bigger and charge more for it?

I am, Sir, yours faithfully,

Hampstead, N.W., Sept. 4th, 1913. L. G. GLOVER.

*** We agree with Dr. Glover that the curtailment of the entries in the Medical Directory may cause a good deal of trouble. It is not an easy task, despite his assertion, "to write original papers culled from other men's books or brains"; and, as a rule, when this is done editors, however easy-going, detect the imposition.—ED. L.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Baltimore (Johns Hopkins University)*: Dr. K. M. Wilson, of Montreal, has been appointed to the chair of Gynæcology, in succession to Dr. Slemons.—*Bologna*: Dr. Riccardo Luzzatto has been recognised as *privat-docent* of Physiological Chemistry.—*Breslau*: Dr. E. Frank has been recognised as *privat-docent* of Medicine.—*Budapest*: Dr. E. Seifert, *privat-docent* of Psychiatry, has been granted the title of Extraordinary Professor.—*Cologne (Academy of Practical Medicine)*: Dr. Kohner, director of the Municipal Children's Hospital, has been appointed *docent* of Pædiatry.—*Frankfort*: Dr. Neubürger, Sanitary Privy Councillor, who is celebrating the sixtieth anniversary of his doctor's degree, has been granted the title of Professor.—*Guatemala*: Dr. Lizardo Estrada has been appointed Professor of Histology and Pathological Anatomy.—*Halle*: Dr. V. Schmieden, *privat-docent* in Berlin, has been appointed Professor of Surgery, in succession to the late Dr. von Bramann; and Dr. Loening and Dr. von Hoesslin, *privat-docenten* of Medicine, have been granted the title of Professor.—*Heidelberg*: Dr. G. Hirschel, *privat-docent* of surgery, has been granted the title of Professor.—*Königsberg*: Dr. M. Fetzer has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Leipsic*: Dr. W. Kruse, professor in Bonn, has been appointed to the chair of Experimental Hygiene, in succession to Dr F. Hofmann, resigned.—*Milwaukee (Marquette University Medical School)*: Dr. J. Vander Erve, professor in the University of Alabama, Mobile, has been appointed to the chair of Physiology.—*Modena*: Dr. Giovanni Marchetti, of Padua, has been recognised as *privat-docent* of External Pathology.—*Munich*: Dr. T. Göth has been recognised as *privat-docent* of Pædiatry.—*Münster*: This, the Westphalian University, has hitherto been limited to three faculties—Law, Roman Catholic Theology, and Philosophy—which last included a scientific and pharmaceutical department. Two additional faculties of Protestant Theology and Medicine are now about to be established. The buildings for the latter, including pathological and hygienic institutes, will cost over 4,000,000 marks (£200,000).—*Naples*: Dr. Stefano Delle Chiaie has been recognised as *privat-docent* of Midwifery and Gynæcology.—*New York (Columbia University College of Physicians and Surgeons)*: Dr. James A. Miller, Dr. Walton Martin, Dr. Austin W. Hollis, and Dr. H. M. Lyle have been appointed Professors of Clinical Medicine.—*Palermo*: Dr. Andrea Cosentino, of Rome, has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Parma*: Dr. Attilio Bertolotti has been recognised as *privat-docent* of Police Sanitation.—*Rome*: Dr. Gaetano Paludetti has been recognised as *privat-docent* of Otology and Laryngology.—*San Francisco (University of California)*: Dr. W. Palmer Lucas, of Boston, has been appointed to the chair of Pædiatry.

Dr. John Dean Buchanan, of Blackburn, has been appointed medical officer and school medical officer for Lancaster at a commencing salary of £400 per annum, in succession to Dr. Joseph Cates, who has been appointed to similar positions for the county borough of St. Helens.

THE INSTITUTE OF TROPICAL MEDICINE IN NORTH QUEENSLAND.—Sir W. MacGregor, Governor of Queensland and a medical man, opened recently the new buildings of the Institute of Tropical Medicine at Townsville, North Queensland. The institute owes its origin to the pioneer work of Dr. Frodsham, then Bishop of North Queensland, and Professor Anderson Stuart, Dean of the Faculty of Medicine at the University of Sydney. The Imperial Colonial Office gave £400 to help at the start, Mr. W. K. D'Arcy contributed £1000, and the Universities of Sydney, Melbourne, and Adelaide subscribed. Dr. Anton Breinl, late of the Liverpool School of Tropical Medicine, was appointed director, and temporary premises were secured at the Townsville (North Queensland) Hospital. The Federal Government of Australia are subscribing £4000 a year, and the Government of Queensland £400 a year, towards the expenses.

DUFF HOUSE AS A PRIVATE HOSPITAL.—An interesting scheme has just been inaugurated in Banff, where Duff House, which was presented by the late Duke of Fife to the citizens of Banff and Macduff several years ago, has within the last few months been adapted to the needs and conveniences of a hospital, the first of its kind in the United Kingdom, as the institution is to be devoted to the treatment of diseases of nutrition. An experienced staff has been secured, the senior physician being Dr. Edmund Ivens Spriggs, formerly physician at St. George's Hospital, London. An assistant physician, analytical chemist, fully qualified matron, and nurses complete the staff. Duff House was built between the years 1739 and 1745, and is a splendid building in the Renaissance style of architecture. Internally the house has been modified to suit its new purposes, but nothing has been done to mar the external features of the building. Fine views are obtained from all the windows. The hospital possesses an operating theatre and two fully equipped laboratories, the larger for pathological chemistry, and containing all the apparatus for carrying out analyses in diseases of nutrition on the most scientific principles. There is also an X ray room. Extensive baths have been provided, one set for each sex. These baths include intestinal douche baths, douche-massage baths, electric light, and other medicated and special baths. All the bedrooms are heated with steam. Ample kitchen and staff accommodation has been secured, but throughout care has been taken as far as was possible to preserve the original features of the house, which include some fine old Adams' mantelpieces.

COMPLAINT BY BIRKENHEAD AGAINST LIVERPOOL SANITARY AUTHORITY.—Certain Birkenhead councillors have for a long time had a grievance insomuch as the Liverpool Port Sanitary Authority has an isolation hospital at New Ferry on the Cheshire side of the river, and cases have been sent from Liverpool to New Ferry by ambulances which cross the river in the ordinary traffic boats. Lately some members of the Birkenhead council were nominated as advisory members of the hospital committee of management. The complaint now made is that these members were not summoned to a meeting of the committee the day of their election and before it had been confirmed in the city council. They further complain that they were not invited to be of a party of inspection which was visiting all the Liverpool

hospitals, the New Ferry Hospital included. Then one councillor applied at the New Ferry Hospital to be allowed to make a personal inspection; as the hospital is for infectious diseases the keeper refused to allow him to enter without medical authority. A second series of letters of complaint have been published relating to a case of leprosy. This case had been brought to Liverpool from America, whence the patient, a Syrian, had been returned as an undesirable alien. The man had been taken to the New Ferry Hospital in an ambulance by the ordinary ferry boat for goods traffic; this has been made a cause of complaint. As a matter of fact, there must have been the minimum danger in such a case. It is common knowledge that there is a leper living in the heart of Liverpool who goes about the streets in the ordinary way, and no doubt may even go about Birkenhead. This patient has been shown at the meetings of the Liverpool Medical Institution. Doubtless at the next municipal elections, "Vote for —— and no Lepers," will be quite an effective cry.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BUCHANAN, JOHN DEAN, M.B., B.Ch., B.A.O. R.U.I., D.P.H. Vict., has been appointed Medical Officer of Health of Lancaster.

DAVIES, TREVOR BERWYN, M.D., B.S. Lond., B.Sc., M.R.C.P. Lond., has been appointed Registrar and Pathologist to the Hospital for Women, Soho-square, London.

DICKSON, WILLIAM ARNOTT, M.D., Ch.B. St. And., F.R.C.S. Edin., D.P.H., has been appointed Tuberculosis Officer for Gloucestershire.

DYKES, ANDREW LESLIE, M.D. Edin., D.P.H. Lond., has been appointed Assistant Medical Officer of Health of the County Borough of Oldham.

HENDERSON, JOHN, M.D., Ch.B. Glasg., F.R.F.P.S. Glasg., has been appointed Visiting Physician to the Glasgow Royal Infirmary.

PEYTON, THOMAS HENRY, M.D., B.Ch., B.A.O. Dub., D.P.H., has been appointed Tuberculosis Officer for Cheshire.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ARGYLE AND BUTE ASYLUM, Lochgilphead.—Assistant Medical Officer, unmarried. Salary £160 per annum, with apartments, board, and laundry.

BATH, ROYAL UNITED HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

BEDFORD COUNTY HOSPITAL.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and laundry.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—House Physician and House Surgeon. Salaries at rate of £75 per annum, with board, residence, &c.

BETHNAL GREEN INFIRMARY AND WORKHOUSE, Cambridge Heath, E.—Assistant Medical Officer. Salary at rate of £100 per annum, with apartments, board, and washing.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Junior House Surgeon. Salary £100 per annum, with board and residence.

BIRMINGHAM CITY ASYLUM, Rubery Hill.—Junior Assistant Medical Officer. Salary £200 per annum, with apartments, board, laundry, &c.

BIRMINGHAM CITY FEVER HOSPITAL, Little Bromwich.—Assistant Medical Officer. Salary £150 per annum, with board and residence.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer, unmarried. Salary £200 per annum, with apartments and attendance.

BIRMINGHAM, QUEEN'S HOSPITAL.—Two House Physicians, Two House Surgeons, and One Obstetric and Ophthalmic House Surgeon, each for six months. Salary at rate of £50 per annum each, with board, lodging, and washing.

BOLTON INFIRMARY AND DISPENSARY.—Second House Surgeon. Salary £100 per annum, with apartments, board, and attendance.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £100 per annum.

BRISTOL ROYAL INFIRMARY.—Three House Surgeons and One House Physician. Salaries at rate of £100 per annum. Also Throat, Nose, and Ear House Surgeon. Salary at rate of £75 per annum. All with apartments, board, and laundry, and for six months

BURY INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, residence, and washing.

CANCER HOSPITAL, Fulham-road, S.W.—House Surgeon for six months. Salary £70 per annum.

CANTERBURY MENTAL HOSPITAL, Canterbury.—Assistant Medical Officer, unmarried. Salary £200 per annum, with board, lodging, washing, and attendance.

CARDIFF, KING EDWARD VII.'S HOSPITAL.—House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, and laundry.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £200 per annum, with apartments.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Judd-street, St. Pancras, W.C.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Surgeon. Also Surgeon to Out-patients. Also Clinical Assistants.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £90 per annum, with board, apartments, and laundry.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Resident Medical Officer. Salary £150 per annum, with board, &c.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Physician and House Surgeon. Salary £100 per annum each, with board, residence, and washing.

DORCHESTER, DORSET COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—House Surgeon and Assistant House Surgeon. Salaries £100 and £65 per annum respectively, with board and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Surgeon for six months. Salary at rate of £75 per annum, with board, residence, and laundry.

ENNISKILLEN, FERMANAGH COUNTY HOSPITAL.—House Surgeon. Salary £72 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, London, S.E.—Ten Clinical Assistants in Out-patient Departments.

EXMINSTER, DEVON COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary £200 per annum, with quarters, board, and laundry.

GLASGOW DISTRICT MENTAL HOSPITAL, Lenzie.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and laundry.

GLOUCESTER, GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant Physician.

GRIMSBY AND DISTRICT HOSPITAL.—Senior House Surgeon. Salary £100 per annum. Also Junior House Surgeon. Salary £80 per annum, with board, lodging, attendance, and washing.

HALIFAX ROYAL INFIRMARY.—Second House Surgeon, unmarried. Salary £100 per annum, with residence, board, and washing. Also Third House Surgeon, unmarried. Salary £90 per annum, with residence, board, and washing.

HAMMERSMITH INFIRMARY AND WORKHOUSE, Ducane-road, Wormwood Scrubs, W.—Assistant Medical Superintendent of Infirmary and Assistant Medical Officer of Workhouse (joint appointment). Salary £120 per annum, with board, lodging, washing, and attendance. Also Second Assistant Medical Officer for Infirmary and Workhouse (joint appointment). Salary £110 per annum, with board, lodging, washing and attendance.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—IN-PATIENTS' DEPARTMENT, Haverstock-hill: House Physician and House Surgeon for six months. Salaries at rate of £70 per annum, with board, residence, and laundry. CAMDEN TOWN OUT-PATIENTS' DEPARTMENT: Resident Casualty Officer. Salary £140 per annum, with board, residence, and laundry. Also Assistant Casualty Officer for six months. Salary at rate of £60 per annum, with board, residence, and laundry.

HASTINGS, EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary at rate of £70 per annum, with residence, board, and washing.

HEMEL HEMPSTEAD, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and washing.

HOSPITAL FOR WOMEN, Soho-square, W.—Resident Medical Officer for six months. Salary at rate of £60 per annum.

HULL ROYAL INFIRMARY.—House Physician, unmarried. Also Assistant House Surgeon. Salary £100 per annum in each case, with board and lodging. Also Casualty House Surgeon. Salary at rate of £60 per annum for six months' appointment or £80 per annum for twelve months, with board and lodging.

KENSINGTON AND FULHAM GENERAL HOSPITAL, Earl's Court, London, S.W.—Resident Medical Officer. Salary at rate of £75 per annum, with board and laundry.

KENT COUNTY COUNCIL.—Tuberculosis Officer. Salary at rate of £500 per annum.

KING'S COLLEGE HOSPITAL.—Resident Assistant Chemical Pathologist. Salary £60 per annum, with board and lodging.

LEAMINGTON, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—House Physician. Salary £85 per annum, with board, residence, and laundry.

LEWES VICTORIA HOSPITAL.—Resident Medical Officer. Salary £120 per annum, with apartments, board, washing, and attendance.

LIVERPOOL INFIRMARY FOR CHILDREN.—Resident House Surgeon and Resident House Physician for six months. Salary £30 in each case, with board and lodging.

MACCLESFIELD GENERAL INFIRMARY.—Senior House Surgeon and Junior House Surgeon. Salary £100 and £80 per annum respectively, with board and residence.

MANCHESTER CHILDREN'S HOSPITAL, OUT-PATIENTS' DEPARTMENT, Gartside-street, Manchester—Assistant Medical Officer for six months. Salary £100 per annum.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

MANCHESTER ROYAL INFIRMARY CONVALESCENT HOSPITAL, Cheadle.—Assistant Medical Officer, unmarried, for six months. Salary at rate of £80 per annum, with board and residence.

MANCHESTER, VICTORIA MEMORIAL JEWISH HOSPITAL, Cheetham.—Resident Medical Officer for six months. Salary at rate of £80 per annum, with rooms, board, and laundry.

MARGATE, ROYAL SEA BATHING HOSPITAL FOR SURGICAL TUBERCULOSIS.—Resident Surgeon. Salary at rate of £120 per annum, with board, residence, and laundry.

MIDDLESBROUGH, NORTH RIDING INFIRMARY.—Senior House Surgeon. Salary at rate of £100 per annum for first six months, with board, residence, and laundry.

MONMOUTHSHIRE EDUCATION COMMITTEE.—Third Assistant Medical Officer. Salary £250 per annum.

NATIONAL HEALTH INSURANCE COMMISSION (ENGLAND).—Medical Officers. Salary £500 per annum.

NEW HOSPITAL FOR WOMEN.—Clinical Assistants (female).
NEWCASTLE-UPON-TYNE DISPENSARY.—Visiting Medical Assistants. Salary £200 per annum.
NEWPORT (MON.), ROYAL GWENT HOSPITAL.—Resident Medical Officer. Salary at rate of £100 per annum, with board, residence, and laundry.
NORFOLK EDUCATION COMMITTEE.—Assistant Medical Officer. Salary £250 per annum.
NORTHAMPTON, COUNTY BOROUGH EDUCATION COMMITTEE.—Dental Surgeon. Salary £250 per annum.
NORWICH, NORFOLK AND NORWICH HOSPITAL.—House Surgeon in charge of Septic Wards and Casualty House Surgeon for six months. Salary £60, with board, lodging, and washing.
NOTTINGHAM WORKHOUSE AND INFIRMARY.—Resident Assistant Medical Officer, unmarried, for six months. Salary at rate of £165 per annum, with apartments, board, attendance, and washing.
OXFORD COUNTY ASYLUM, Littlemore, near Oxford.—Assistant Medical Officer. Salary £150 per annum, with apartments, board, and washing.
PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, residence, and washing.
PORTSMOUTH ROYAL HOSPITAL.—House Physician for six months. Salary £80 per annum, with board, &c.
PRESTON, COUNTY ASYLUM, Whittingham, Lancs.—Assistant Medical Officer, unmarried. Salary £200 per annum, with board, apartments, and washing.
QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Medical Officer in charge of Electrical Department. Salary £100 per annum.
ROCHDALE INFIRMARY.—Second House Surgeon, unmarried. Salary £100 per annum, with board, residence, and laundry.
ROYAL HOSPITAL FOR DISEASES OF THE CHEST, PREVENTION OF CONSUMPTION DEPARTMENT, City-road, E.C.—Medical Officer. Salary £250 per annum.
ROYAL NATIONAL MISSION TO DEEP SEA FISHERMEN.—Medical Men for service at Sea. Salary 4 guineas per week, with board and travelling expenses.
ROYAL NATIONAL ORTHOPÆDIC HOSPITAL.—Surgical Registrar. Salary £105 per annum. Also Resident House Surgeon, unmarried, for six months. Salary £100 per annum, with board, residence, and washing.
ROYAL NAVAL MEDICAL SERVICE.—Twenty-five appointments.
ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Senior Resident Medical Officer, unmarried, for six months. Salary at rate of £100 per annum, with residence, board, and laundry.
SALFORD ROYAL HOSPITAL.—Resident Surgical Officer. Salary at rate of £100 per annum. House Physician. Salary at rate of £90 per annum. House Surgeon. Salary at rate of £75 per annum. Junior House Surgeon and Casualty House Surgeon. Salary at rate of £65 per annum each. All for six months, with board and residence.
SALFORD UNION INFIRMARY.—Resident Assistant Medical Officer, unmarried. Salary £120 per annum, with apartments, attendance, and rations.
SEAMEN'S HOSPITAL SOCIETY.—DREADNOUGHT HOSPITAL, Greenwich: Two House Physicians and Two House Surgeons. Salary £50 per annum each, with board, residence, and washing. ALBERT DOCK HOSPITAL, Connaught-road, E.: House Surgeon; also House Surgeon to Out-patients. Salary £75 per annum each, with board, residence, and washing. All for six months.
SHEFFIELD UNION HOSPITAL, Firvale.—Resident Assistant Medical Officer, unmarried. Salary £120 per annum, with apartments, rations, &c.
SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. Salary at rate of £100 per annum, with rooms, board, and washing.
STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £100 per annum, with board, washing, and residence.
SWANSEA GENERAL AND EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board, washing, and attendance.
TAUNTON, SOMERSET AND BATH ASYLUM, Cotford.—Assistant Medical Officer, unmarried. Salary £180 per annum, with apartments, board, washing, attendance, &c.
WAKEFIELD GENERAL HOSPITAL.—Second House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.
WARRINGTON, LANCASHIRE COUNTY ASYLUM, Winwick.—Pathologist and Assistant Medical Officer. Salary £200 per annum, with board, apartments, attendance, and washing.
WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant Resident House Surgeon and Anæsthetist, unmarried. Salary £75 per annum, with board, residence, and washing.
WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Junior House Physician and Junior House Surgeon. Salaries at rate of £75 per annum respectively.
WESTERN OPHTHALMIC HOSPITAL, Marylebone-road, W.—Two Non-Resident House Surgeons. Salary at rate of £50 and £40 per annum respectively.
WESTMINSTER HOSPITAL (opposite Westminster Abbey).—Assistant House Physician, non-resident but board provided.
WINDSOR, KING EDWARD VII. HOSPITAL FOR WINDSOR, ETON, AND DISTRICT.—Second House Surgeon. Salary £75 per annum, with residence, board, laundry, and attendance.
WREXHAM INFIRMARY.—Resident House Surgeon. Salary £120 per annum, with board, lodging, and washing.
YORK DISPENSARY AND MATERNITY HOSPITAL.—Resident Medical Officer, unmarried. Salary £140 per annum, with board, lodging, and attendance.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Acts at Broadford, in the county of Limerick; at Clonavaddy, in the county of Tyrone; and at Lymington, in the county of Hants.

A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HEALTH, SANITATION, AND HOSPITALS IN HONG-KONG: SEVERE OUTBREAK OF PLAGUE.

AN official report on the Blue-book of Hong-Kong for the year 1912 has been received at the Colonial Office and issued as a Parliamentary paper. From this it appears that the civil population of the colony, according to a census taken in May, 1911, was 456,739, comprising 444,664 Chinese and 12,075 non-Chinese. There has been great activity in regard to building operations to meet the urgent demands for house-room created by the immigration of some 40,000 to 50,000 Chinese who poured into Hong-Kong during 1911. These people were of all classes, and came principally from the neighbouring provinces, seeking refuge from the political unrest which ultimately led to the overthrow of the dynasty and the establishment of a Republican Government in China. Pending the erection of sufficient dwellings for the accommodation of so large an increase in the normal population the existing dwellings became greatly overcrowded, but any very strict enforcement of the overcrowding laws was deemed impossible, while the penalty which had to be paid for this abnormal state of affairs—amounting practically to the conversion of Hong-Kong into a huge refuge camp—was a severe outbreak of plague, no less than 1847 cases being recorded. These cases were generally distributed throughout the city, except in the European business quarter (where only a few cases occurred) and throughout Kowloon, and the most probable determining cause of the epidemic was a considerable augmentation of the rat population consequent on the general overcrowding of the native dwellings. The overcrowding naturally led to a marked increase in the amount of waste food, both in the houses and in the yards and lanes adjacent thereto, and although efforts were made to deal with this excess by improving scavenging, yet it is obvious that where houses are overcrowded with human beings and their belongings the cleanliness of the premises must fall below the average, and refuse of all sorts will lie concealed among the lumber. The rat population depends almost entirely upon the available food-supply, and this large increase in the amount of food refuse would promptly lead to a corresponding increase in the number of susceptible rats by more frequent breeding and larger litters. Plague is endemic among the rats of Hong-Kong, and the infection is known to be carried forward from season to season by the Mus decumanus or drain rat, among which species plague-infected animals are found throughout the year. During the human plague season—February to July—the infection spreads to the house rat (Mus rattus), and although cases of human plague do certainly occur when only infected drain rats are being discovered; the infection being acquired in warehouses, basements, workshops, and outhouses generally, into which these rats are driven by the rain storms flooding their underground haunts, yet the maximum incidence of human infection corresponds exactly with the maximum incidence of the rattus infection, and the main efforts of the Sanitary Department are therefore directed to the exclusion of rats from human dwellings and the limitation of the food-supply of the rat population. The latter is secured by a daily collection of garbage from all dwellings and by the efficient scavenging of lanes and alleys, while the former object is aimed at by the concreting of all ground surfaces, the protecting of drain openings by gratings, and the prohibition of ceilings, wainscotings, and hollow walls. There is unfortunately, however, a very large number of old houses in the colony which possess these hollow walls, constructed of soft bricks, which form ideal resting places for the Mus rattus and enable it to enter the dwellings at night to forage for food; and it is in those districts in which such buildings are most numerous that plague has displayed its greatest incidence. There is no remedy for such faulty construction short of actual demolition of the premises, which is too heroic a measure to be practicable on any extended scale.

The general birth-rate for the year was 9·0 per 1000 among the Chinese community and 16·2 per 1000 among the non-Chinese community, as compared with 6·3 and 19·2 during 1911. The general death-rate for the year was 26·33 per 1000 among the Chinese community and 14·51 among the non-Chinese community, as compared with 21·13 and 13·38 during 1911. The higher death-rate among the Chinese, as compared with the previous year, is due in part to the severe outbreak of plague and in part to the influx of Chinese from the mainland, while the latter cause contributed also to the higher birth-rate. The number of deaths from malaria (432) shows an increase on the previous year (338), which can be accounted for by the exceptional influx of infected persons from the mainland. The deaths from plague numbered 1768, as compared with 253 in 1911 and 23 in 1910. Small-pox deaths numbered 565—all Chinese with the exception of two British children and one Indian child, all of which were returned as showing no signs of vaccination; only two of the

fatal Chinese cases were returned as having been previously vaccinated. There were 2317 deaths from respiratory diseases among the Chinese, as compared with 2487 in 1911. Phthisis claimed 757 Chinese victims, while other forms of tuberculosis represent an additional 379 deaths, making a total of 1136, or 12·1 per cent. of the total deaths among that community. Beri-beri was responsible for 231 deaths, as compared with 320 during 1911 and 566 in 1910. During the past few years circulars have been distributed to all large employers of coolie labour, calling their attention to the fact that beri-beri is produced by the consumption of white rice as the staple article of diet without a sufficiency of other foods, and advising that beans should be supplied with the rice when fresh meat or fresh fish cannot be afforded, and it is possible that the dissemination of this information may have had some influence in reducing the mortality from this disease. Deaths from other diseases were: measles, 8; typhoid fever, 87; diphtheria, 21; diarrhœa, 286; dysentery, 181; puerperal fever, 11; septic infections, 64; syphilis, 140; poisoning, 12; injuries, 157; alcoholism, 2; developmental diseases, 378; old age, 355; cancer, 43; paralysis and convulsions, 558; heart diseases, 190; pneumonia, 1113; enteritis and gastro-enteritis, 97; cirrhosis of liver, 26; peritonitis, 23; nephritis, 83; unknown, 330; total, all causes, 9682. The mean shade temperature for the year at the Royal Observatory, Kowloon (108 feet above main sea level), was 71·9°, the maximum being 92·5° on Sept. 10th and the minimum 45·3° on Dec. 28th. The hottest month was July, with a mean temperature of 83·0°, and the coldest January, with a mean temperature of 57·3°. The total rainfall of the year was 63·93 inches, as compared with an average of 84·21 inches during the ten preceding years.

Government hospitals consist of the Civil Hospital (to which is attached an isolated maternity hospital), the Victoria Hospital for Women and Children, and the Kennedy Town Infectious Diseases Hospital. There is an observation station capable of accommodating 1500 persons in the event of an outbreak of infectious disease on board a ship arriving in the harbour. The Civil Hospital contains 150 beds in 19 wards. 2731 in-patients and 15,177 out-patients were treated during 1912. The Maternity Hospital contains 12 beds for Europeans and four for Asiatics. The Victoria Hospital at the Peak contains 41 beds, and during 1912 234 patients were under treatment there. At Kennedy Town Hospital, which contains 26 beds, 42 cases were treated, 35 being small-pox. The Tung Wa Hospital, opened in 1872, is mainly supported by the voluntary subscriptions of Chinese, but receives an annual grant of 8000 dollars from the Government. Only Chinese are treated in this institution. Chinese as well as European methods of treatment are employed in accordance with the wishes expressed by the patients or their friends. About half the number are now treated by Western methods. The hospital, managed by a committee of Chinese gentlemen, is under the supervision of a visiting physician, who is a member of the medical department, whilst a Chinese house surgeon, trained in Western medicine, is a member of the hospital staff. There are 323 beds, and 4279 patients were accommodated during 1912. The Tung Wa also maintains a branch hospital for small-pox cases (Chinese only); it contains 58 beds. The Alice Memorial and Affiliated Hospitals are managed and controlled by the missionaries resident in Hong-Kong, agents of the London Missionary Society, and consist of the Alice Memorial Hospital, opened in 1887; the Nethersole Hospital, opened in 1893; the Alice Memorial Maternity Hospital, opened in 1904; and the Ho Miu Ling Hospital, opened in 1906. The number of in-patients in 1912 was 1600, and the number of labours in the Maternity Hospital 351. The Government makes a grant of $300 per annum to these hospitals. To avoid the complete seclusion from friends and relatives which removal of Chinese plague patients to the Kennedy Town Infectious Diseases Hospital entailed, four District Plague Hospitals are now maintained by Chinese in various parts of the colony. These hospitals are under the management of the Chinese Public Dispensaries Committee, and receive a grant of $2000 a year from the Government. The new Kwong Wa Hospital for Chinese in the Kowloon Peninsula was opened on Oct. 9th, 1911. It occupies a site of three acres, and as designed will ultimately provide accommodation for 210 patients. The hospital will eventually be under the same management as the Tung Wa Hospital. It receives a grant of $3500 per annum from the Government.

SHOCKS IN THE USE OF ELECTRICAL ACCESSORIES.

To the Editor of THE LANCET.

SIR,—Some hospitals' staffs and doctors have no doubt experienced unnecessary shocks in using their electrical accessories when energy is taken from the more usual continuous current public supply. With an alternating current supply similar shocks are rarely experienced, as in such case a transformer is invariably used having double winding, the low pressure side of which is entirely separate from the live side. The majority of small medical electrical instruments—particularly foreign ones—such as lamps, cauteries, &c., are wired up singly, using their metal frames as the other poles of the circuits. As a rule it is easily possible to connect such instruments two ways to the supply at several points. Whenever it happens that in coupling up the flexibles of such instruments their metal frames are connected so that either of the live (or outer) conductors of the supply are fed through the uninsulated parts, then shocks to operators or patients are almost inevitable. These may be of quite a serious nature, particularly to patients. Good insulation of the ordinary wiring and use of a resistance box (sometimes incorrectly called a transformer) will not prevent shocks in such cases.

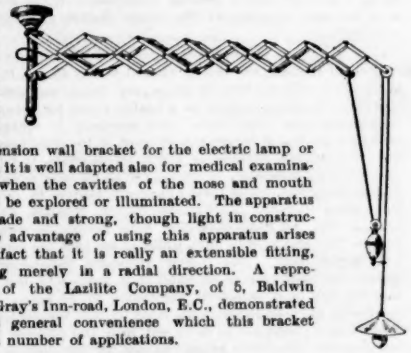
I venture to think that a wider knowledge of how to avoid this danger on a continuous current system, in an inexpensive manner, would be valuable to your readers. All socket and plug connexions should be of the concentric type which cannot be reversed. If, however, existing plugs are of the two-pin type, one plug leg can easily be made thicker than the other. If lampholder and adapter connexions are used an extra pin in adapter and corresponding slot in holder will ensure that only one way of connecting-up can be effected. Once the correct polarity has then been established, so that the corporation live side feeds the insulated pole of instruments, no further trouble will be experienced so long as the public supply connexions are not reversed at any other points such as fuse or switchboards, but this is not a likely possibility. Trusting this may be of some use,

I am, Sir, yours faithfully,

Manchester, Sept. 5th, 1912. H. C. CREWS, M.I.E.E.

THE "LAZILITE" WALL BRACKET.

THE accompanying illustration will indicate the numerous directions in which this extension bracket can be usefully applied. Primarily designed as an extension wall bracket for the electric lamp or telephone, it is well adapted also for medical examinations, as when the cavities of the nose and mouth require to be explored or illuminated. The apparatus is well made and strong, though light in construction. The advantage of using this apparatus arises from the fact that it is really an extensible fitting, not acting merely in a radial direction. A representative of the Lazilite Company, of 5, Baldwin Gardens, Gray's Inn-road, London, E.C., demonstrated to us the general convenience which this bracket offers in a number of applications.



THE MEETINGS OF THE BRITISH ASSOCIATION.

To the Editor of THE LANCET.

SIR,—I observe that in reply to a correspondent in THE LANCET of Sept. 6th you print a list of the years and places of meeting of the International Medical Congresses, and having regard to the British Association meeting now being held at Birmingham, I shall be glad if you would also supply a similar list relating to that association. I do not wish to impose upon you the functions of a Haydn's Dictionary of Dates, but such information is always interesting, and now that I want it I have not it at hand. It is not always convenient to purchase a copy of a date book annually.

I am, Sir, yours faithfully,

Sept. 8th, 1912. W. F.

*** The following is a list of the years and cities in which the meetings of the British Association have been held. No doubt the organisation of the British Association publish a list in some of their documents, while the information can be found by consulting a set of Whitaker's Almanacks:—1831, York; 1832, Oxford; 1833, Cambridge; 1834, Edinburgh; 1835, Dublin; 1836, Bristol; 1837, Liverpool; 1838, Newcastle; 1839, Birmingham; 1840, Glasgow; 1841, Plymouth; 1842, Manchester; 1843, Cork; 1844, York (2); 1845, Cambridge (2); 1846, Southampton; 1847, Oxford (2); 1848, Swansea; 1849, Birmingham (2); 1850, Edinburgh (2); 1851, Ipswich; 1852, Belfast; 1853, Hull; 1854, Liverpool (2); 1855, Glasgow (2); 1856, Cheltenham; 1857, Dublin (2); 1858, Leeds; 1859, Aberdeen; 1860, Oxford (3); 1861, Manchester (2); 1862, Cambridge (3); 1863, Newcastle (2); 1864, Bath; 1865, Birmingham (3); 1866, Nottingham; 1867, Dundee; 1868, Norwich; 1869, Oxford (4); 1870, Liverpool (3); 1871, Edinburgh (3); 1872, Brighton; 1873, Bradford; 1874, Belfast (2); 1875, Bristol (2); 1876, Glasgow (3); 1877, Plymouth (2); 1878, Dublin (3); 1879, Sheffield; 1880, Swansea (2); 1881, York (3); 1882, Southampton (2); 1883, Southport; 1884, Montreal; 1885, Aberdeen (2); 1886, Birmingham (4); 1887, Manchester (3); 1888, Bath (2); 1889, Newcastle (3); 1890, Leeds (2); 1891, Cardiff; 1892, Edinburgh (4); 1893, Nottingham (2); 1894, Oxford (5); 1895, Ipswich (2); 1896, Liverpool (4); 1897, Toronto; 1898, Bristol (3); 1899, Dover; 1900, Bradford (2); 1901, Glasgow (4); 1902, Belfast (3); 1903, Southport (2); 1904, Cambridge (4); 1905, Cape Town; 1906, York (4); 1907, Leicester;

1908, Dublin (4); 1909, Winnipeg, Canada; 1910, Sheffield (2); 1911, Portsmouth; 1912, Dundee (2); 1913, Birmingham (5).

We do not know on what principle the meeting places are chosen. There are now 96 great towns in England and Wales, according to the Registrar-General, and all the meetings have hitherto been held in 26 towns, and of these Oxford, Cambridge, and Bath were not a few years ago included in the Registrar-General's scope of "great" towns, though their fitness as centres for the meeting of the British Association is obvious. Blackburn, Bolton, Coventry, Derby, Halifax, Hastings, Huddersfield, Middlesbrough, Northampton, Stoke-on-Trent, and Great Yarmouth remain amongst the "great" towns as yet unselected, and Rugby has claims not only as an ancient place but also as a central English town remarkably easy of access.—ED. L.

SLEEPING ACCOMMODATION FOR AN INFIRMARY NURSE.

THE South Molton board of guardians recently appointed a trained nurse to their workhouse infirmary, who after holding the post for two weeks resigned, giving as the reason that the accommodation provided for her was so uncomfortable. She stated that she had no apartments as mentioned in the advertisement, for "her bedroom was used for cooking and keeping the utensils in, as well as a general storeroom." The guardians accepted the resignation and decided to advertise for an uncertificated nurse, as there "was a difficulty in obtaining a trained nurse." It will be doubtful whether the patients in the infirmary will benefit by the ministrations of the uncertificated person who is willing to sleep in an apartment that is alike a bedroom, a scullery, and a general storeroom. If the circumstances have not been exaggerated, the South Molton guardians must set them right.

THE MERITS OF DAVOS.

Mr. Bernard Hudson, the British Consul, writes to the Foreign Office as follows:—"Davos, from its dry, sunny climate and altitude of over 5000 feet, is probably unique as a health resort for persons suffering from pulmonary tuberculosis, more especially in winter time; but although this fact is recognised by most of the continental nations, the great climatic advantages which Davos offers, to sufferers from phthisis more especially, do not appear to be fully recognised in the United Kingdom. The total number of visitors in 1912 was: long stay, 8218; tourists, 12,674; total, 20,892; invalids, 10,163; grand total, 31,055. Of these only 2099 were British, as compared with 2267 in 1911 and 2513 in 1910, while as far back as 1899 there were 3000 British here. The Queen Alexandra Sanatorium has now opened the new wing of 18 beds, thus increasing the capacity of this fine and most beneficial institution to 78 beds. I need not enlarge on the magnificent work done by this institution; suffice it to say that it continues to carry out fully the purpose for which it was founded. There is a project on foot for the making of a public park in Davos. This will be a great boon, more especially in the summer, and will, it is hoped, be the means of attracting more visitors during that time of the year. The Lower Engadine railway will be opened this summer. This will form a connexion with Davos (in summer) *vid* postal diligence service over the Flüela Pass (Davos to Süs in six hours). The new railway between Davos and St. Moritz, *vid* Filisur, is an immense boon."

A NEW GAS FIRE.

THE principle of applying a gas fire to the existing grate has certain advantages provided that the large aperture of the chimney constructed to carry away the smoke of the coal fire does not allow too costly an escape of heat. Dr. Charles Gayford, of Bank Chambers, 218, Strand, London, W.C., overcomes this by constructing a fire-brick back to the grate which slopes forward at an angle of 60° or so. By this arrangement the heat is directed in radiant form into the apartment which it is desired to warm. Just below this main "refractor" is a smaller fire brick sloping backwards, so that the energy of combustion is combined in, so to speak, a wide cave, the loss of heat by convection currents being by this means prevented to a large extent. There is only one burner, which is an extended Bunsen, the mixture of gas and air issuing from a long slit opening just short of the width of the grate. The air inlet is some distance from the flame and is fitted with gauze covering to prevent "lighting back." On account of this shape of the burner it is necessary that the bars at the bottom of the grate should run transversely. The space between the "refractor" is loosely packed with asbestos, clay balls, or other suitable material. The fire gives an efficient and healthy heat, the efficiency being due to the "refractor" and the "clean" character of the heat to the adequate ventilating shaft—the ordinary chimney. The consumption is consistent with an economic use of gas for domestic heating purposes, and altogether the principle which Dr. Gayford advocates and applies in his gas fire is sound and attractive.

ERRATUM.—In our report last week (p. 729) of the last day's proceedings at the Section of General Pathology and Pathological Anatomy of the International Medical Congress a communication on the Susceptibility of Tumour to Irradiation was attributed to Dr. Charles Russ and Dr. Helen Chambers. Miss Chambers's collaborator was Mr. S. Russ, D.Sc.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Armour: Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women.

THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Armour: Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON), Clinical Theatre, London Hospital, Mile End-road, E.

Demonstrations in Clinical Medicine:—

MONDAY.—2.15 P.M., Dr. Wall: Pulmonary Tuberculosis.
TUESDAY.—2.15 P.M., Dr. Grünbaum: Diseases of the Blood.
WEDNESDAY.—2.15 P.M., Dr. Hutchison: Diagnosis of Abdominal Disease.—Dr. Thompson: Diseases of the Ductless Glands.
THURSDAY.—2.15 P.M., Dr. Head: Mental Symptoms occurring in the Practice of General Medicine.
FRIDAY.—2.15 P.M., Dr. L. Smith: Common Cardiac Conditions.

Demonstrations on Selected Surgical Cases and on Cases of Interest in the Wards of the Hospital:—

MONDAY.—10.30 A.M., Mr. R. Howard.
TUESDAY.—2 P.M., Mr. Lett.
WEDNESDAY.—2 P.M., Mr. Warren.
THURSDAY.—2 P.M., Mr. R. Milne.
FRIDAY.—2 P.M., Mr. Walton.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

EDINBURGH POST-GRADUATE COURSES IN MEDICINE (IN CONNEXION WITH THE UNIVERSITY AND ROYAL COLLEGES).

MONDAY.—9 A.M., Obstetrical Clinic (at the Royal Maternity Hospital); Refraction (at the Royal Infirmary); Operative Surgery (at the University). 10 A.M., Neurology (at the Royal Infirmary); Operative Surgery (at the University). 11 A.M., Dermatology, Post-mortems, Genito-urinary Surgery (at the Royal Infirmary); 12 noon, Surgical Clinic (at the Royal Hospital for Sick Children); Genito-urinary Surgery (at the Royal Infirmary). 2 P.M., Bacteriology, Surgical Anatomy (at the University). 3.30 P.M., Hæmatology (at the University); Surgical Pathology (at the Royal College of Surgeons). 5 P.M., Special Lecture (at the University). 6 P.M., Pathology of Eye (at the University); Gynecological and Obstetric Pathology.

TUESDAY.—9 A.M., Refraction (at the Royal Infirmary); Operative Surgery (at the University). 10 A.M., Neurology, Gynecology (at the Royal Infirmary); Operative Surgery (at the University). 11 A.M., Medical Clinic, Surgical Out-patients, Post-mortems, Gynecology (at the Royal Infirmary); Operations (at the Royal Hospital for Sick Children); Genito-urinary Surgery (at the Royal Infirmary). 12 noon, Medical Clinic (at the Royal Hospital for Sick Children); Diseases of Eye, Genito-urinary Surgery (at the Royal Infirmary). 2 P.M., Bacteriology, Surgical Anatomy (at the University). 3.30 P.M., Tropical Diseases (at the University); Surgical Pathology (at the Royal College of Surgeons). 5 P.M., X Rays (at the Royal Infirmary). 6 P.M., Pathology of Eye (at the University); Surgical Pathology (Lantern) (at the Royal College of Surgeons).

WEDNESDAY.—9 A.M., Obstetric Clinic (at the Royal Maternity Hospital); Refraction (at the Royal Infirmary); Operative Surgery (at the University). 10 A.M., Neurology (at the Royal Infirmary); Operative Surgery (at the University). 11 A.M., Dermatology, Post-mortems, Genito-urinary Surgery (at the Royal Infirmary). 12 noon, Surgical Clinic, Genito-urinary Surgery (at the Royal Infirmary). 2 P.M., Bacteriology, Surgical Anatomy (at the University). 3.30 P.M., Hæmatology (at the University); Surgical Pathology (at the Royal College of Surgeons). 5 P.M., Special Lecture. 6 P.M., Pathology of Eye (at the University); Gynecological and Obstetric Pathology.

THURSDAY.—9 A.M., Refraction (at the Royal Infirmary); Operative Surgery (at the University). 10 A.M., Neurology, Gynecology (at the Royal Infirmary); Operative Surgery (at the University). 11 A.M., Medical Clinic, Surgical Out-patients, Post-mortems, Gynecology (at the Royal Infirmary); Operations (at the Royal Hospital for Sick Children); Genito-urinary Surgery (at the Royal Infirmary). 12 noon, Medical Clinic (at the Royal Hospital for Sick Children); Diseases of Eye, Genito-urinary Surgery (at the Royal Infirmary). 2 P.M., Bacteriology, Surgical Anatomy (at the University). 3.30 P.M., Tropical Diseases (at the University); Surgical Pathology (at the Royal College of Surgeons). 5 P.M., X Rays (at the Royal Infirmary). 6 P.M., Pathology of Eye (at the University); Surgical Pathology (Lantern) (at the Royal College of Surgeons).

FRIDAY.—9 A.M., Obstetric Clinic (at the Royal Maternity Hospital); Refraction (at the Royal Infirmary); Operative Surgery (at the University). 10 A.M., Neurology (at the Royal Infirmary); Operative Surgery (at the University). 11 A.M., Dermatology, Post-mortems, Genito-urinary Surgery (at the Royal Infirmary). 12 noon, Surgical Clinic, Genito-urinary Surgery (at the Royal Infirmary). 2 P.M., Bacteriology, Surgical Anatomy (at the University). 3.30 P.M., Hæmatology (at the University); Surgical Pathology (at the Royal College of Surgeons). 5 P.M., Special Lecture. 6 P.M., Pathology of Eye (at the University); Gynecological and Obstetric Pathology.

SATURDAY.—10 A.M., Fevers (at the City Hospital); Gynecology (at the Royal Infirmary). 11 A.M., Gynecology (at the Royal Infirmary).

ROTUNDA HOSPITAL POST-GRADUATE COURSES, Dublin.

MONDAY.—10 A.M., Obstetrical Lecture: Pubiotomy and Symphysiotomy. 11 A.M., Examination of Patients and Minor Operations.

TUESDAY.—10 A.M., Major Operations.

WEDNESDAY.—10 A.M., Obstetrical Lecture: Pubiotomy and Symphysiotomy (continued). 11 A.M., Examination of Patients and Minor Operations.

THURSDAY.—10 A.M., Major Operations.

FRIDAY.—10 A.M., Gynæcological Lecture: Uterine Tumours (Malignant) (continued). 11 A.M., Examination of Patients and Minor Operations.

For further particulars of the above Lectures, &c., see Advertisement Pages.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced:—

April 26th–Nov. 5th (Ghent).—International Exhibition.
May 31st to October (London, Earl's Court).—Imperial Services Exhibition.
May–October (Leipzig).—First International Building Exhibition.
June–October (London, Crystal Palace).—Anglo-German Exhibition.
June 24th–Sept. 30th (London, 54a, Wigmore-street).—Historical Medical Museum. (Organised by Mr. Henry S. Wellcome.)
Sept. 9th–13th (Vienna).—Second International Congress of Life Saving and Prevention of Accidents.
,, 10th–17th (Birmingham).—British Association.
,, 21st–26th (Vienna).—Eighty-fifth Meeting of German Natural Philosophers and Physicians.
,, 22nd–28th (Milan).—Fourteenth International Anti-alcoholic Congress.
,, 30th–Oct. 3rd (Southampton).—Church Congress.
Oct. 28th–Nov. 1st (London, Royal Horticultural Hall).—Twenty-fourth Universal Cookery and Food Exhibition.
,, 29th (London, Shepherd's Bush).—National Gas Exhibition.
(Chicago).—Congress of the International Association of Refrigeration.
(Washington).—Congress of American Physicians and Surgeons.

EDITORIAL NOTICES.

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It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

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Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1913, which was completed with the issue of June 28th, were given in THE LANCET of July 5th.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1913 are now ready. Bound in cloth, gilt lettered, price 16*s.* carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

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Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their journals and an earlier delivery than the majority of Agents are able to effect.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 10th, 1913.

Date	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall	Solar Radio in Vacuo.	Maximum Temp. Shade	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Sept. 4	30·07	E.	...	105	68	57	60	62	Dull
,, 5	30·06	E.	..	85	66	60	60	63	Overcast
,, 6	30·22	ENE	0·22	84	65	58	58	59	Showery
,, 7	30·31	N.E.	...	106	67	56	57	59	Fine
,, 8	30·31	N.E.	...	111	69	53	56	58	Fine
,, 9	30·16	WNW	..	108	67	52	55	57	Overcast
,, 10	30·29	NNE	0·04	107	67	49	51	54	Fine

The following journals, magazines, &c., have been received:—British Journal of Dental Science, Journal of the Royal Army Medical Corps, Archives of the Roentgen Ray, Medical Chronicle, British Journal of Children's Diseases, Maryland Medical Journal, Monthly Cyclopedia and Medical Bulletin, American Journal of the Medical Sciences, Therapeutic Gazette, American Journal of Tropical Diseases and Preventive Medicine, Pediatrics, International Journal of Surgery, Archives of Pediatrics, Jahrbuch für Kinderheilkunde, Archives Générales de Médecine, Nordiskt Medicinskt Arkiv, Clinique Infantile, &c.

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